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ABSTRACT

The Office of Educational Research and Improvement includes five National Education Research Institutes. This document reports on these Institutes' activities. The text opens with a discussion of the activities of the National Institute on Early Childhood Development and Education, including the operations of its subsidiary, the National Center for Early Development and Learning. The National Institute on the Education of At-Risk Students is covered next and features overviews of the Center for Research on Education, Diversity, and Excellence and the Center for Research on the Education of Students Placed At Risk. This section is followed by an analysis of the National Institute on Educational Governance, Finance, Policymaking, and Management and its programs, such as the Consortium for Policy Research in Education and the National Center for the Study of Teaching and Policy. The report then describes the activities of the National Institute on Postsecondary Education, Libraries, and Lifelong Learning. This Institute's centers include the National Center for Postsecondary Improvement and the National Center for the Study of Adult Learning and Literacy. Finally, the National Institute on Student Achievement, Curriculum, and Assessment includes the Center for the Improvement of Early Reading Achievement, the National Center for Research on Evaluation, Standards, and Student Testing, the National Center for Improving Student Learning and Achievement in Mathematics and Science, and the National Research Center on English Learning and Achievement. Each section includes information on field-initiated studies, small-business innovation research, and directed research. (RJM)

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Research Compendium: Office of Educational Research and Improvement's National Institutes

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Foreword

The Office of Educational Research and Improvement includes five National Education Research Institutes: the National Institute on Early Childhood Development and Education; the National Institute on the Education of At-Risk Students; the National Institute on Educational Governance, Finance, Policymaking and Management; the National Institute on Postsecondary Education, Libraries, and Lifelong Learning; and the National Institute on Student Achievement, Curriculum, and Assessment.

Each of these Institutes supports research through an integrated set of programs. The *National Educational Research and Development Centers* program concentrates research resources on an area of critical national interest. Centers are required to develop an integrated, cohesive set of research-based activities to address key problems in those areas.

Under the *Field-Initiated Studies* program, applicants determine both the topic of investigation and the methodology to be employed. Under this program, each Institute sponsors research related to its mission.

The Institutes support research through the *Small Business Innovation Research* program. Under this program the Institutes support innovative research activities conducted by small firms.

The *Directed Research* program is used to fill critical gaps in an Institute's research agenda.

Each Institute's program of research is described in this publication. In each case, the work is organized according to the categories described above.

Acknowledgments

A substantial number of OERI staff, contractors, and grantees helped produce this document. Special thanks go to the Institute coordinators who oversaw the production of each Institute's portion of this work. Those individuals are Carol Sue Fromboluti from the National Institute on Early Childhood Development and Education; Holly Martinez from the National Institute on the Education of At-Risk Students; Luna Levinson from the National Institute on Student Achievement, Curriculum, and Assessment; Ron Anson from the National Institute on Educational Governance, Finance, Policymaking and Management; and Jim Fox from the National Institute on Postsecondary Education, Libraries, and Lifelong Learning. Thanks also to Diane Magarity and Donna DiToto from OERI's Media and Information Services for editing, formatting, typesetting, and indexing the entire document.

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Introduction

The National Institute on Early Childhood Development and Education (ECI) is in the Office of Educational Research and Improvement of the U.S. Department of Education. ECI was created to carry out a comprehensive program of research, development, and dissemination to improve early childhood development and education.

The Institute sponsors coordinated and comprehensive research, development, and dissemination activities that will investigate what factors, including services and support, might improve the learning, cognitive, and social-emotional development, and general well-being of children from birth through age eight, and their families.

The Institute also sponsors comprehensive and challenging research that investigates the most effective strategies and practices which:

- Make children's transitions as smooth and supportive as possible—transition periods from infant to toddler, toddler to preschooler, and preschooler to early elementary school student;
- Empower families;
- Enhance the health development of young children;
- Promote the development of a competent, well prepared early childhood workforce; and
- Encourage collaboration at all levels—families, educators, communities, and policymakers.

The National Center for Early Development and Learning (NCEDL)

Title of Project: The National Center for Early Development and Learning (NCEDL)—Center Overview

Principal Investigator(s): Don Bailey, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599–8180

Program: National Educational Research and Development Centers Program

Funding Level: $14,332,356. Year 1 $2,749,731; Year 2 $2,941,125; Year 3 $2,949,198; Year 4 $2,947,735; Year 5 $2,944,567

Project Period: 3/1/96–2/28/01

Center Mission and Focus: The mission of the National Center for Early Development and Learning (NCEDL) is to provide national leadership and generate new research-based knowledge in order to improve the learning, development, and education of children from birth through eight years of age. NCEDL's research and development activities are based on the belief that the first eight years of a child's life are a powerful, formative period. In addition, during this time frame, factors in the child's family and community, the child's early child care and school experiences, and public policies influence young children and their families.

NCEDL is administratively housed within the Frank Porter Graham Child Development Center at the University of North Carolina at Chapel Hill. The Frank Porter Graham Center is one of the premier research facilities in the country. NCEDL has three other research sites at the University of Virginia at Richmond, Virginia, the University of Arkansas at Little Rock, Arkansas, and the University of California at Los Angeles, California. The research activities across all of the sites study young children in terms of family, child care, and school and community influences.

NCEDL's primary goal is to conduct research to determine how different contexts influence young children's learning and development. In addition, NCEDL is working to:

- Determine how the early childhood workforce perceives best practices. NCEDL is conducting a series of national surveys to learn what early childhood educators, child-care providers, and others in the field consider: (a) quality in child-care programs; (b) the best methods to help young children move from preschool to kindergarten classes; and (c) state-of-the-art programs that train adults to work with young children.

- Promote and support broad-based partnerships. NCEDL has a multidisciplinary focus, drawing on several departments across the four research sites. In addition, diverse racial, ethnic, and cultural perspectives are represented in the research activities. Each research project has an advisory committee comprised of parents of young children, early childhood practitioners, and other researchers. In addition, NCEDL has a Research Partnership activity. This means that nationally recognized researchers, early childhood educators, advocates, parents, and policymakers work with NCEDL researchers on a regular basis to review protocols, suggest best ways to translate research findings, recommend new research questions and recommend ways in which to improve NCEDL.

- Synthesize knowledge and recommend future research directions. NCEDL convenes an annual research synthesis conference. Each year, NCEDL offers experts on a given topic an opportunity to come together to distill research findings related to that topic, discuss new directions for research, professional development, policy, and practice. The quality of infant toddler care was the topic of the first synthesis conference. The topic of this year's conference is transitions to kindergarten, and professional development will be the topic for year three.

- Disseminate research findings to a wide audience. NCEDL considers one of its primary tasks to be translating research findings into usable, practical materials for parents, early childhood educators, and policymakers. Both printed and electronic media are used to put research into practice.

NCEDL's research activities focus on six major strands or themes. Complete descriptions of the multiple projects within each strand are included after this overview.

Strand 1: The Quality of Early Child Care and Intervention Programs

The goal of this strand is to identify the characteristics of "quality" in child care and early intervention programs and to determine how quality affects young children's learning and development.

Strand 2: Kindergarten Transitions

Many young children who move from one class or school to another find this shift or transition to be stressful. Chances for successful learning and development may be reduced as a result. Therefore, the purpose of this strand is to identify methods and practices that help young children have as successful a transition to kindergarten as possible. It studies the relationships between a child and his or her parents, a child and his or her peers, a child and teacher, and the teacher and the parents. The research will examine how these relationships might help young children make good adjustments from one class, program, or school to the next level.

Strand 3: Ecological Interventions for Young Children At-Risk

This research strand is developing, putting into use in the community, and then evaluating models designed to help young children who are at high risk for poor development and later academic failure. The models also are designed to provide the families of the children with information and skills needed to help their children be as successful as possible. The research studies target three populations of children:

- those whose families have limited or low reading skills;
- those who have behaviors that result in exclusion from child-care programs; and
- those who have been identified as having a failure to thrive, which means that within the first 2 years of life and for no diagnosable reason, the children lose rather than gain weight.

These children are at risk for cognitive and social-emotional delays, and their families need a great deal of emotional support.

Strand 4. Public Policy Studies

The purpose of this research strand is to: identify policy barriers to the provision of high quality child-care services; document policy issues related to kindergarten transition practices; study policies that impact young children at risk, especially those with early onset behavior problems; and conduct case studies of policy issues related to professional development and other early childhood issues.

Strand 5: Translation of Research to Practice

This strand will put research findings into usable formats for a range of audiences. It also will develop and test new methods for getting the research-based information into the hands of as many early childhood educators, parents, and policymakers as possible in order to improve practice and bring about changes in the systems that serve young children and their families.

Strand 6: Statistical Modeling and Program Support Unit

The Frank Porter Graham Child Development Center has archives of research data collected over the past 30 years. The current research projects underway at the National Center for Early Development and Learning are tapping some of these existing data sets to develop and demonstrate statistical methods that can be used to analyze new data and to answer new questions about early learning and development.

Educational Significance of Center Work: The National Center for Early Development and Learning has a primary goal: to improve learning for young children. In order to build a cohesive body of knowledge about early learning and development, all of the Center's research activities are studying young children in the context of their families, their child care or school environments, and their communities. The research is generating new knowledge about the complex ways in which individual, family, community, and system variables influence and interact on young children and the services designed to improve their learning and support their families. NCEDL is testing new models for translating research findings and getting the information into the hands of young children's families and the early childhood workforce.

NCEDL research is providing young children's families and extended families with new information that will help them promote young children's healthy development and learning. The research also is giving the early childhood field new information and methods that will improve professional development. This will bolster the skills and knowledge of child-care providers, preschool teachers, kindergarten and early elementary school educators, and others who work on a day-to-day basis with young children.

Furthermore, NCEDL studies are documenting how positive policies can be put in place at the state and community levels to promote healthy learning and development of young children. Through NCEDL's evaluations and other research, the field is gaining new knowledge that will promote community partnerships. These partnerships will result in service systems that strengthen young children and their families.

OERI Contact: Naomi Karp, 202-219-1935

Title of Study: The Quality of Child Care and Early Intervention Studies

Project 1: The Cost, Quality, and Outcomes Study

Principal Investigator(s): Richard Clifford at the University of North Carolina, Chapel Hill, NC; and Carollee Howes at the University of California, Los Angeles, CA

Program: National Educational Research and Development Centers: National Center for Early Development and Learning (NCEDL)

Funding Level: $460,932. Year 1 $369,481; Year 2 $91,451

Project Period: 03/1/96–02/28/01

Project Design: The purpose of this project is to determine how child-care programs of different quality levels and costs affect young children's long-term cognitive and social-emotional development and success in school. This study began in 1993 with private foundation funding. The study followed 826 young children who were enrolled in center-based child-care programs in California, Colorado, Connecticut, and North Carolina. Its purpose was to determine how the quality of child-care programs affected the children's intellectual and social development.

With Early Childhood Institute funds, the research is now following approximately 400 of these same children through second grade to evaluate their cognitive and social-emotional development. Standardized checklists and rating scales are used to measure the quality of the children's learning environments and homes, plus the children's school performance and behaviors.

On a regular basis, the project staff send letters, postcards, and other types of communications to the families of the children in the study to keep them informed. This strategy also keeps the families interested and helps reduce the number of children who dropout of the study.

The project is coordinated with similar projects in Germany, Spain, Portugal, and Austria to allow for international comparisons.

Educational Significance of the Study: Almost 70 percent of mothers of preschool age children are in the workforce. Most of their children are in child-care centers. The 1993 Cost, Quality, & Outcomes Study found that the majority of child-care centers are of mediocre quality and that the quality affects children's performance and social adjustment in kindergarten. This project will determine if and how the quality of centers, early elementary school classrooms, and home learning environments affect children's school behavior and performance through second grade. Too many young children are arriving at school without the basic information and behaviors needed for optimal learning. Using research-based information to improve the quality of child-care environments is one step towards improving the skills young children need to be successful in kindergarten and beyond.

Status of Study and Products: Survey instruments for parents and first-grade teachers were tested and developed. Analysis of data collected throughout 1997 is underway. An article describing the study and written specifically for parents appeared in *Child* magazine.

The following presentations were made: The annual conference of the National Association for the Education of Young Children; to the staff of the Pennsylvania State Child Welfare Office; to the Illinois Early Childhood Network on Financing Child Care; and to the National Institute on Child Health and Human Development's Child and Family Well-Being Research Network.

In addition, five papers have been completed. Four have been published in early childhood research journals, including *Early Childhood Research Quarterly*, *The Merrill-Palmer Quarterly*, and *Young Children*. The fifth paper is under review for publication in a research journal.

The project director has received funds from the Packard and Mailman Foundations to extend the project for an additional year.

OERI Contact: Donna Hinkle, 202–219–2172

Title of Study: The Quality of Child Care and Early Intervention Studies

Project 2: Best Practices Study

Principal Investigator(s): Richard Clifford, the University of North Carolina, Chapel Hill, NC; and Carollee Howes, the University of California, Los Angeles, CA

Program: National Educational Research and Development Centers: National Center for Early Development and Learning (NCEDL)

Funding Level: $1,677,502. Year 1 $191,608; Year 2 $318,962; Year 3 $381,902; Year 4 $390,660; Year 5 $394,370

Project Period: 03/01/96–02/28/01

Project Design: This study is investigating the quality of services of child care by looking at selected centers in California and North Carolina that serve large numbers of minority children and that early childhood professionals and parents have identified as unique and exemplary. The purpose of the study is to describe what staff in programs identified as exemplary do and to determine who to make information about exemplary programs useful to others. The researchers are interviewing parents and staff at the sites, describing specific teacher practices, and using standardized checklists and rating scales to measure the quality of the centers and compare the results with the opinions of the early childhood professionals and parents. The researchers will follow between 60 and 100 children in the Los Angeles sites as they progress through school to determine how early teaching practices affect their learning and development.

The project also will study issues such as how communities support adults who are striving to be economically self-sufficient; how new ideas and plans affect the quality of child care; how child-care providers can teach children and adults to resolve problems without turning to acts of violence. Based on literature reviews of what constitutes a best practice and results of their own past research, the staff has developed a survey tool, Practices in Early Childhood Settings National Survey, to gather information. The survey will be mailed to 10,000 child care, public and private preschool, and Head Start teachers to determine what they regard to be the best methods to promote learning and development. They also will be asked to answer if and how those methods are actually used, what the barriers are to using the methods, and how the barriers might be overcome. The sample represents the national population of early childhood educators according to race, ethnicity, education and training, geography, and other characteristics.

Educational Significance of the Study: This study will give early childhood educators, researchers, policymakers, and families information about which specific methods used in child care and other learning environments strengthen young children's skills and abilities needed for success in school.

Status of Study and Products: Sixteen of the 20 unique sites in California and North Carolina have been identified and visited by the research team. The staff have developed a detailed plan for collecting information through interviews, case studies, focus groups, observations, and site visits.

Interview questions also will be in Spanish. The study's major product to date is the Practices in Early Childhood Settings National Survey. It has had three pilot tests and has been changed based on the results. It is now ready to be mailed in January 1998.

OERI Contact: Donna Hinkle, 202–219–2172

Title of Study: The Quality of Child Care and Early Intervention Studies

Project 3: Impact of the Quality of Services on Infants and Toddlers with Disabilities and Their Families

Principal Investigator(s): Don Bailey and Lynette Aytch Darkes, the University of North Carolina at Chapel Hill, NC

Program: National Educational Research and Development Centers: National Center for Early Development and Learning (NCEDL)

Funding Level: $522,000. Year 1 $75,000; Year 2 $120,000; Year 3 $124,000; Year 4 $128,000; Year 5 $75,000

Project Period: 03/01/96–02/28/01

Project Design: In 1986, the Education for All Handicapped Children's Act, now called Individuals with Disabilities Education Act (IDEA), provided funds for states to offer early intervention services for infants and toddlers with disabilities. Over the past decade there has not been a study to determine quality indicators in early intervention services. This study is using the same methodology as the Best Practices Survey except that it is a new study looking at early intervention services for children with disabilities. The ultimate goal is to look at the correlation between quality early intervention services and outcomes for children. The study is designed to: identify indicators of high quality services for infants and toddlers with disabilities; determine those practices believed to constitute high quality services; develop an instrument that can be used to measure the quality of the services; use the instrument to evaluate the quality of services offered in early intervention programs; and examine how differences in quality may affect the outcomes for the children and their families.

Educational Significance of the Study: Through a survey of early childhood educators and families of young children with disabilities, characteristics of "high quality" early intervention programs will be identified. The characteristics of high quality from the survey responses will be compared with information garnered from an extensive literature review regarding the characteristics of high quality programs and will be used to develop a survey instrument.

The instrument that is being developed will be used to evaluate what makes a high quality program. The instrument will be tested in roughly eight sites in North Carolina and eight sites across the country with populations of children with different types of disability, families, and programs. The exact sites are still being determined. Once revisions to the instrument take place it will be used to look at variations in quality in early intervention services; how quality differs, and how those differences correlate with child outcomes.

Status of Study and Products: The literature regarding quality and early intervention for infants and toddlers with disabilities has been reviewed and summarized. An article, "Defining and Measuring Quality in Early Intervention Programs for Infants and Toddlers with Disabilities and Their Families," has been submitted for publication in a special issue of *Early Education and Development*, a journal for early childhood special education researchers. A second paper has been accepted for publication in *Exceptional Children*.

A draft of the evaluation instrument has been completed. A group of seven early childhood special education researchers and service providers have met with NCEDL project staff throughout the development process. The project's local advisory group of parents and educators also has had an extensive role in the development of the instrument.

Project staff have made presentations at two national early childhood meetings and one North Carolina State Licensing Agency meeting. They also have presented their work to the staff of the North Carolina Department of Health and Human Services staff responsible for children's disability programs.

OERI Contact: Naomi Karp, 202–219–1935

Title of Study: Kindergarten Transition Studies

Project 1: The National Survey of Kindergarten Transition Practices

Principal Investigator(s): Martha Cox, University of North Carolina at Chapel Hill, NC; Robert Pianta, University of Virginia, VA; and Linda Burton, Pennsylvania State University, PA

Program: National Educational Research and Development Centers: National Center for Early Development and Learning (NCEDL)

Funding Level: $38,500. Year 1 $38,500

Project Period: 03/01/96–02/28/01

Project Design: The National Survey of Kindergarten Transition Practices was conducted to address the following questions: What are the most prevalent kindergarten transition practices in America's schools? What do teachers perceive to be the most important transition practices and barriers to their implementation? A sample of 10,871 kindergarten teachers was drawn from a list of 50,000 teachers nationwide. Completed surveys were returned by 3,824 teachers. This survey return rate (35 percent) is the same as the National Center for Educational Statistic (NCES) sample from the 1993–94 Schools and Staffing Survey. The cost of the survey includes only printing, postage, and data entry—not staff time.

Educational Significance of the Study: Information from this survey is being used to describe the state of the nation with respect to kindergarten teacher's beliefs about what affects children's entry to school, how teacher practices are related to children's transitions into kindergarten and from kindergarten to first grade, what teachers believe are the best ways to help children take these steps in their school career, and what keeps teachers from putting these practices into use. This survey has been adapted for use in a multinational effort in Europe.

The results of this survey have direct implications for school policies related to transition practices, community-wide policies and practices that link preschoolers and their families to schools, and will allow researchers to design and test different ways to help children who may be at risk for difficulties in making the transition to kindergarten.

Status of Study and Products: Data from the National Survey of Kindergarten Transition Practices are currently being analyzed, and research reports are being written for publication. A set of four papers based on these reports and analyses will be presented as a symposium at the 1998 meeting of the American Educational Research Association (AERA). A paper entitled Kindergarten Teachers and Classrooms: A Transition Context, is in press, and will be published in a special issue of *Early Education and Development*. Seven additional papers will be submitted for publication during the Winter of 1998. At the same time, summaries of the findings from the survey will be prepared for wide distribution to educators, parents, and policymakers. Finally, in October 1997 a mailer with preliminary findings was sent to the kindergarten teachers who responded to the survey and said that they wanted a copy of the results.

OERI Contact: James Griffin, 202–219–2168

Title of Study: Kindergarten Transition Studies

Project 2: The Longitudinal Transition Study

Principal Investigator(s): Martha Cox, University of North Carolina at Chapel Hill, NC; Robert Pianta, University of Virginia, VA; and Linda Burton, Pennsylvania State University, PA

Program: National Educational Research and Development Centers: National Center for Early Development and Learning (NCEDL)

Funding Level: $1,044,504. Year 1 $505,062; Year 2 $221,281; Year 3 $107,556; Year 4 $111,031; Year 5 $99,574

Project Period: 03/01/96–02/28/01

Project Design: This study examines the early school transition experiences of 300 children who have been followed since birth as part of a larger national study. The National Institute on Child Health and Human Development (NICHD) Study of Early Child Care has collected information on an annual basis on selected children since birth (1993) in Virginia, North Carolina, and Arkansas. With funds from the National Institute on Early Childhood Development and Education, the Longitudinal Transition Study was designed to find out about the early school transition experiences of 300 children who were sampled from the larger NICHD study. These children are attending kindergartens across the three states, and are being tracked so that parent and teacher interviews and direct child assessments can be completed.

Information for this study was collected through a detailed, half-day observation of each child's kindergarten classroom. At the same time, each child's teacher was asked about the ways in which he/she helped the child to make the transition to kindergarten and how each child made that adjustment. Each child's parent was asked during a telephone interview to talk about their child's experiences when they started kindergarten. Finally, the researchers characterized the communities in which the children and the schools reside to understand how communities, families, and schools collaborate in children's transition to kindergarten.

Educational Significance of the Study: This longitudinal study was intended to identify how early childhood experiences at home and in preschool settings influence children's transitions to kindergarten. Using data from the larger NICHD study of Early Child Care, and observations of children in kindergarten, this project identifies parent and teacher practices that help children to make a positive transition to the kindergarten classroom. Using data collected by the larger NICHD study since birth, including child assessments and parent interviews, collected every 6 months, this study will take into account how the child and their family were doing before entering, what teachers do to make the transition easier, and the type of community within which the family and school reside. Results of this study will be used to educate teachers, school administrators, policymakers and parents on how to help children make a successful transition to kindergarten.

Status of Study and Products: Researchers are currently analyzing these data and writing research reports for publication. One paper, entitled "A Parent's Observations about Their Children's

Ttransitions to Kindergarten," has been submitted for publication in *Young Children*, and 12 other papers are in preparation.

OERI Contact: James Griffin, 202–219–2168

Title of Study: Kindergarten Transition Studies

Project 3: The Transition Intervention Study

Principal Investigator(s): Martha Cox, University of North Carolina at Chapel Hill, NC; Robert Pianta, University of Virginia, VA; and Linda Burton, Pennsylvania State University, PA

Program: National Educational Research and Development Centers: National Center for Early Development and Learning (NCEDL)

Funding Level: $765,210. Year 1 $69,276; Year 2 $91,245; Year 3 $229,510; Year 4 $235,533; Year 5 $140,246

Project Period: 03/01/96–02/28/01

Project Design: This work is based on previous research demonstrating the importance of interpersonal relationships in children's successful transition to kindergarten. This study will design, implement, and evaluate an intervention designed to improve the quality of child-peer, child-teacher, teacher-parent, and parent-school relationships for young children at high-risk for school failure. Intervention strategies to be assessed include having children meet and play with children who will be in their kindergarten classroom, having children have regular contact with their kindergarten teacher-to-be, and having parents meet with kindergarten teachers regarding expectations for kindergarten. The purpose of this intervention is to help young children make a good adjustment from preschool to kindergarten and from kindergarten to first grade. The main question being addressed by this intervention is: How do programs that focus on a child's emotional relationships ease their preschool transitions? In Fall of 1997, researchers began ongoing meetings with local programs that serve high-risk four-year-old children and their families. These meetings include conversations with program staff and joint family-program discussions. These programs will participate in the research study, which is scheduled to begin in the Fall of 1998.

Educational Significance of the Study: This study will test a new way to help high-risk four-year-old children make a successful transition to kindergarten by focusing on how these children relate to their new teacher and classmates. The intervention also is designed to improve communication between parents, teachers, and school administrators. If this new model helps at-risk children adjust to kindergarten, it can be used in schools across the country.

Status of Study and Products: Knowledge gained from the other Transition Strand activities are being used to plan and design the evaluation of this intervention, which is scheduled to begin in the Fall of 1998. Preliminary pilot data have been analyzed, and have been submitted for publication at the 1998 *Head Start National Research Conference*. Six additional papers related to the conceptual framework of this intervention and study are in preparation.

OERI Contact: James Griffin, 202–219–2168

Title of Study: Ecological Intervention Studies

Project 1: Intervention for Preschool Children with Behavioral and Socioemotional Problems

Principal Investigator(s): Donna Bryant, University of North Carolina at Chapel Hill, NC

Program: National Educational Research and Development Centers: National Center for Early Development and Learning (NCEDL)

Funding Level: $621,785. Year 1 $78,230; Year 2 $129,705; Year 3 $134,018; Year 4 $137,850; Year 5 $141,982

Project Period: 03/01/96–02/28/01

Project Design: The Ecological Intervention Strand supports the design, implementation, and evaluation of new ways to help young children who are at high-risk for poor cognitive and social development and later school failure. The work also provides the children's families with new skills that will increase their chances for better developmental outcomes. This study is one of three within the strand.

The purpose of this project is to develop and test a set of methods that can be used to include preschoolers with behavior problems in community child care and preschool programs. Previous intervention models and curriculum are being reviewed to examine evidence of their effectiveness and the feasibility of implementing them at the participating programs. The study will result in materials that teachers can use in everyday classroom activities. In addition, mental health professionals and the children's parents will take part in group meetings and home visits.

Questions to be addressed include:

- How might these interventions result in better socioemotional and behavioral outcomes for preschool children?

- How do children's daily environments in child care and at home influence their responsiveness to the interventions? and

- Which children and families are more likely to benefit from intervention than others?

Research methods include preschool teacher surveys and literature reviews which will be used to develop activities that teach positive behaviors to the children, as well as skill building activities for the children's parents and teachers. Intensive teacher training programs will be established. Parent and teacher ratings and independent classroom observation methods will be used to examine changes in individual children's behavior over time. Child-care centers, Head Start programs and State Smart Start classrooms are currently being recruited to participate in the evaluation. To date, 6 preschool classrooms and 32 families have agreed to participate in the study.

Educational Significance of the Study: One of the most frequent complaints from educators across grade levels is that many children have aggressive and antisocial behaviors. This project was developed because so many young children had been "kicked out" of child-care centers in North Carolina because of aggressive behaviors. The study will result in a new set of methods and materials that will make it possible for young children with behavior problems to attend community child care and preschool programs. In addition, it will provide new skills and knowledge that will make it possible for teachers and parents to better manage situations and the children's environments so that more appropriate behaviors occur.

Status of Study and Products: A random sample of 50 teachers was surveyed in April of 1997 to find out about preschool classroom behavior management practices and to obtain teacher ratings on 500 preschool children ages 3–5. The data analysis for this survey is ongoing, and will provide information to guide the planned intervention with children who exhibit socioemotional or behavioral difficulties. Labor intensive classroom observations will be used to complement information obtained through parent and teacher questionnaires.

A paper has been submitted for presentation at the annual meeting of the International Society for the Study of Behavioral Development, which was held in Switzerland in July 1998. In addition, a separate grant from the U.S. Department of Health and Human Services was awarded in September of 1997 to extend this study to Head Start classrooms.

OERI Contact: James Griffin, 202–219–2168

Title of Study: Ecological Intervention Studies

Project 2: Carolina Family Literacy Studies

Principal Investigator(s): Barbara Hanna Wasik, University of North Carolina at Chapel Hill, NC

Program: National Educational Research and Development Centers: National Center for Early Development and Learning (NCEDL)

Funding Level: $737,542. Year 1 $100,840; Year 2 $151,676; Year 3 $156,675; Year 4 $161,676; Year 5 $166,675

Project Period: 03/01/96–02/28/01

Project Design: This study has three components: (1) a longitudinal evaluation of the nine existing Even Start comprehensive family literacy programs in North Carolina; (2) a detailed study of the Even Start programs themselves; and, (3) a longitudinal case study of a portion of families enrolled in Even Start programs. These three components will provide information on children's early literacy, family characteristics, parenting skills, adult literacy, and how these are affected by participation in the Even Start program. The study also will provide information on the Even Start programs, including classroom size, staff education and training, program history, funding, organizational structures, goals and objectives. After a year of planning and selecting appropriate measures, data are being gathered at three sites.

Educational Significance of the Study: Researchers have been working with Abt Associates, the contractor for the national Even Start evaluation, to focus on issues that are complementary to the national evaluation. This study will yield an indepth descriptive analysis of three Even Start programs in North Carolina. By following some of the families enrolled in the programs, it will provide information on what, if any, difference the program made in the lives of the children and their parents. The study involves federal, state, and community Even Start and adult literacy staff in developing the interview and the annotated bibliography. This project will go beyond the national evaluation of Even Start programs by collecting in depth information on how these programs interact with families and to trace the development of emergent literacy in both children and their families.

Status of Study and Products: Data collection began in the Fall of 1997. A family interview has been developed in English and Spanish and is being pilot tested. An annotated bibliography on family literacy will be completed in early 1998. It will be written by the project staff and published and distributed by the Early Childhood Institute. Three papers have been submitted for presentation at research conferences in 1998.

OERI Contact: James Griffin, 202–219–2168

Title of Study: Ecological Intervention Studies

Project 3: Comprehensive Intervention for Children with Failure-to-Thrive (FTT)

Principal Investigator(s): Robert Bradley, University of Arkansas at Little Rock, AR

Program: National Educational Research and Development Centers: National Center for Early Development and Learning (NCEDL)

Funding Level: $673,086. Year 1 $0; Year 2 $186,449; Year 3 $171,098; Year 4 $175,918; Year 5 $139,621

Project Period: 03/01/97–02/28/01

Project Design: The purpose of this study is to determine the effectiveness of a comprehensive intervention for children with Failure-to-Thrive (FTT) and their families. The intervention study will compare children with FTT receiving only basic medical management with those who also receive a 6– to 9–month weekly home visitation program. Home visitors will use the Partners in Parenting Education (PIPE) model, which focuses on increasing parental sensitivity and the strength of the parent-child attachment. Children who live within an hour's drive from Little Rock are in the intervention group. Those who are more than an hour away are in the comparison group and will receive only basic medical and clinical management. It is anticipated that 40 to 50 children and their families will be entered into the program.

The study's evaluation component will gather data when the children enter the program, when they leave, and 3 months after they leave the program. A battery of standardized tests will be used with the children and their parents. Some of these include the Preschool Language Scale, the Bayley Scales of Infant Development, and the Knowledge of Infant Development Inventory.

Educational Significance of the Study: This study will provide new information about the development of children with FTT. It is a condition that cuts across ethnic and racial groups and SES levels. As a result of their child's failure to grow for no diagnosed reason, parents often feel guilty. They may have trouble interacting with the child. This study will provide medical teams with new ways to support the family while providing needed medical care to the child. This study will assess the effectiveness of the PIPE model in conducting home visits with this population.

Status of Study and Products: This study began in March 1997. Staff have been hired and the Partners in Parenting Education (PIPE) training has started. The home-visiting part of the study is being field-tested. Enrollment in the project has been slower than anticipated. Therefore, the guidelines for including children in the intervention group may be expanded to include children who have a diagnosis of "small for gestational age or SGA." Although this group is different from FTT children, SGA babies are nonetheless at similar risk for a number of poor early developmental outcomes that may affect their long-term development and school achievement. These two groups would be examined separately in the statistical data analysis.

Research conference presentations were made by the investigators at the American Psychological Association annual conference; at the University of Texas, Austin; at the Mid-South Educational

Research Association meeting; at the Central Arkansas Chapter of the American Statistical Association. Two presentations are under consideration for 1998.

OERI Contact: James Griffin, 202–219–2168

Title of Study: Public Policy Studies

Principal Investigator(s): James Gallagher, University of North Carolina, Chapel Hill, NC

Program: National Educational Research and Development Centers: National Center for Early Development and Learning (NCEDL)

Funding Level: $452,047. Year 1 $89,277; Year 2 $83,893; Year 3 $87,135; Year 4 $89,731; Year 5 $102,011

Project Period: 3/01/96–02/28/01

Project Design: This set of studies is based on the principle that public policy is the art of distributing resources, when resources may be scarce and demands high. Therefore, this strand addresses this key question: How can states and communities set and carry out efficient, effective, and equitable policies for young children and their families?

In order to answer this question, each National Center for Early Development and Learning (NCEDL) research activity has a public policy research component. Several approaches are being used to gather and evaluate information. For example, early childhood policy literature in the areas of quality child care, transitions, and professional development is constantly being reviewed and synthesized. The information is then used for development of models for translating research to policy such as those described below:

1. State Licensing Regulations for Child Care and Early Childhood Personnel Preparation Resources

Case studies of child-care regulations in Colorado, California, Connecticut, and North Carolina have been prepared in order to recommend policies that both protect young children and promote learning and development. The four case study states for this research are those that comprised the sample for the Child-care Cost, Quality and Outcomes Child-Care study (1995). This study is central to the Center's new work on quality in child care. Those states were chosen so that researchers could link findings from the policy study with the levels of child-care quality that were found in the earlier research. In addition, a conceptual framework, based on organizational theory research literature, is being developed. Agency directors and staff in the four states are being interviewed, budgets are being studied, and other documents are being examined. Using this framework, the states' public policies will be analyzed according to these categories: structure, operations, people, and context. This model will provide a framework for analyzing state regulations devoted to personnel preparation and child-care licensing.

2. Study of State and Federal Funding Flows for Early Childhood Care and Education

This model is designed to provide information about how state and federal dollars are distributed in North Carolina. North Carolina was chosen because it has the Smart Start program, which is a comprehensive public-private initiative to help children enter school healthy and ready to learn, and because North Carolina is one of the states involved in the Cost Quality and Outcomes study. Five statewide early childhood service programs are being studied to learn how to blend resources to build systems. The five agencies include: Head Start, Title I/Prekindergarten, Early Intervention for Infants and Toddlers with Disabilities, Child Care, and Programs for Children from three to five with Disabilities. Telephone interviews and data analysis will identify barriers to and strategies for cross-agency collaboration. The framework described in Model 1 will be used to better understand the obstacles and identify possible solutions to the barriers. In addition, a detailed chart is being developed to show how dollars from different federal agencies move from Washington, DC to Raleigh, NC, then through the state, and down to communities and families.

Educational Significance of the Study: The inclusion of a policy component in each of the research strands is a strong feature of NCEDL. If young children are to come to school better prepared to learn, public policies are needed to support initiatives that will promote quality learning environments and opportunities. Policymakers, parents, and the general public need to have information about how best to provide these opportunities.

This strand requires that researchers think in terms of policy implications of their work. It provides a mechanism for almost immediate translation of research findings for policymakers. The circle of feedback from research to policy allows for urgent policy questions to be addressed by research. In addition, the frameworks and other analysis tools offer policymakers opportunities to solve problems and see some immediate results from research.

Status of Study and Products: In the original NCEDL application, the Policy Strand proposed to focus solely on child-care regulations in Colorado, Connecticut, California, and North Carolina in order to:

- Study state and federal policies related to child-care quality;
- Determine how these policies influence practices at the local level; and
- Examine how these policies might be changed to increase the probability that the quality of child care would improve.

However, during the first 2 years of operation, NCEDL staff has realized the need for a collaborative system for providing early childhood services. Child care is but one piece of that system. Therefore, the scope of this strand has broadened to include the study of resources, transition issues, and personnel preparation, as well as "hands on" opportunities for applying research findings to policy problems. This new body of knowledge will help lay the foundation for a collaborative early childhood service system.

The NCEDL has developed a working partnership with SERVE, the Regional Educational Laboratory that has early childhood as its specialty area. SERVE convenes meetings of early childhood agency representatives, and NCEDL staff present the latest early childhood research and analysis tools for translating research to policy to the group. The group meets as state policy teams and applies the analysis tools to solving actual problems in their work.

Products from the first 2 years of work include: a set of North Carolina funding flow maps; a complete analysis of child-care regulations in four states; a Research-to-Policy Conference with SERVE; and a study of North Carolina's personnel preparation resources.

OERI Contact: Naomi Karp, 202-219-1935

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Title of Study: Statistical Modeling of Extant and Project Data

Principal Investigator(s): Margaret Burchinal, University of North Carolina, Chapel, NC

Program: National Educational Research and Development Centers: National Center for Early Development and Learning (NCEDL)

Funding Level: $834,956. Year 1 $151,655; Year 2 $149,930; Year 3 $155,619; Year 4 $163,619; Year 5 $214,337

Project Period: 03/01/96–02/28/01

Project Design: The Frank Porter Graham Child Development Center has archives of research data collected over the past 30 years. The research projects underway at National Center for Early Development and Learning (NCEDL) tap into these existing data sets and combine them with new data to answer questions about early childhood development and learning. This strand focuses on developing research designs and statistical analyses that use all available information about early childhood development and education and data on children's lives and relationships to test hypotheses. The project has four goals:

1. overseeing all data entry activities to ensure that they are accurate and consistent and archiving data sets so they can be easily combined for later use in secondary data analysis,
2. developing and demonstrating ways to analyze both data collected over time, and data collected as a "snapshot" so that the analysis makes sense given the range of factors in a child's life,
3. testing hypotheses that relate as many factors as possible about a child's life and development with possible outcomes, and
4. analyzing attributes of the child, family, school, and community that are associated with the child's ability to make successful transitions throughout the early years.

Educational Significance of the Study: Adding this archived information with new data collected through the ongoing work of the Center makes for a rich data source. Furthermore, the development and testing of hypotheses, as well as the secondary analysis of extant data add to the understanding of the myriad factors contributing to successful outcomes for young children.

Status of Study and Products: The following activities are related only to data that have resulted from funds from the Early Childhood Institute:

1. *Kindergarten Transition Practices Survey*—the survey data collected from a nationally representative sample of kindergarten teachers have been processed and analysis is almost complete. Analyses will relate early childhood educators' classroom practices to their background characteristics.

2. *Project Design*—center statisticians are assisting in the design of all projects, especially, the Family Literacy Project, the Ecological Intervention for Aggressive Preschoolers, and the Practices in Early Childhood Settings Survey.

The following activities involve secondary data analyses, using new data and existing Frank Porter Graham Center data to answer new research questions:

- *Child-Care Quality as Protective Factor*—data analysis has focused on addressing questions regarding the quality of both in-home and out-of-home child care. Data were combined to test the hypothesis that quality child care will enhance developmental outcomes for all children, but will be especially important for children at risk. Results indicate that child-care quality was related to language acquisition and preacademic outcomes for all children. Quality of child care was especially important for language acquisition among children from minority groups. This paper is being revised.

- *Ethnic Differences in Developmentally Appropriate Child-Care Practices*—several large data bases have been analyzed to determine whether there is evidence that developmentally appropriate care may vary as a function of child ethnicity. Results indicate that child-care quality varied as a function of the age of the child, type of care, teacher education and the ethnicity of the teacher. Care givers with more education tended to provide better quality of care. Preschoolers in center care tended to receive the highest quality of care, whereas children in unlicensed or relative home care tended to receive the lowest quality of care. However, the magnitude of these differences varied as a function of the teacher's ethnicity. While African-American and Hispanic teachers tended to be rated lower on the measures of quality, the magnitude of the difference between white and African-American teachers was greater in unlicensed home care than in other settings, and greater in preschool center care and relative care than in infant/toddler center care.

- *Family and Child-Care Services Related to Family and Child Outcomes*—analysis is taking place to determine how services impact families—in particular, which services work best for which families.

OERI Contact: Carol Sue Fromboluti, 202–219–1672

Title of Study: Translating Research to Practice

Principal Investigator(s): Pamela Winton, University of North Carolina, Chapel Hill, NC

Program: National Educational Research and Development Centers: National Center for Early Development and Learning (NCEDL)

Funding Level: $844,186. Year 1 $174,458; Year 2 $176,111; Year 3 $159,871; Year 4 $165,573; Year 5 $168,173

Project Period: 03/01/96–02/28/01

Project Design: The overall goal of this strand is to make sure that research findings are used to improve young children's learning and development. Therefore, National Center for Early Development and Learning (NCEDL) staff are concerned with: translating their research findings into early childhood policies and practices; assisting the research community by increasing constituent involvement in the review process; and, turning the concerns of educators, parents, and policymakers into new research questions.

In order to accomplish these tasks, NCEDL is developing and implementing a comprehensive dissemination and media plan to ensure that all of their research is accessible, practical, and useful for a variety of audiences. The staff is developing and disseminating consumer-friendly products and information, based on NCEDL research.

In addition, the NCEDL is connecting with other early childhood agencies that have dissemination and professional development responsibilities to make the most of existing resources.

The strand supports the involvement of constituents in all aspects of NCEDL research and dissemination activities. Materials have been developed to teach parents and educators who are members of project advisory committees how to be effective participants in research discussions.

Educational Significance of the Study: This strand is vital to the significance of the Center's research because it assures that the work of the Center will be used to improve young children's learning and development. Research findings are used to inform policy and practices for young children; to contribute to the nation's body of research and inform future research; and to involve constituents in the development of new research by involving them in aspects of the Center's work.

Status of Study and Products: NCEDL creates an individualized dissemination strategy for all information as it becomes available from ongoing research. Staff have developed an extensive mailing list consisting of policymakers, news media, and early childhood professionals and parents. Nearly 2,000 early childhood practitioners, researchers, administrators, and parents have been provided with information through presentations at local, state, and national meetings. An estimated 570 early childhood faculty, professionals and parents have participated in training provided by NCEDL staff. Collaboration continues to be a focus, with ongoing contact with representatives from labs and other early childhood agencies discussing mutual research and dissemination interests.

The following products have been developed:

Staff have made eight presentations to early childhood faculty members, early childhood educators and higher education faculty members, administrators, teachers, and consultants at meetings, including the National Association for the Education of Young Children, Illinois Early Childhood Faculty Institute, and the North Carolina Annual Early Intervention Conference.

In addition, the following publications have been prepared:

NCEDL trifold brochure—this brochure explains the goal and mission of the Center, explains the research strands, and tells people how to get in touch with NCEDL staff or how to get information.

Policy Brief and Fact Sheet on Quality in Child Care—these short syntheses of NCEDL research were developed for policymakers. They highlight findings from the Center's research and highlight policy implications.

Early Developments, Vol. 1., Nos. 1 and 2—this quarterly magazine is designed to share information with researchers, academics, policymakers, and the general public. It summarizes work of the Center and of the Frank Porter Graham Child Development Center and presents it in a popular, magazine format.

News releases—six news releases on research findings or conference proceedings were created and distributed.

OERI Contact: Carol Sue Fromboluti, 202–219–1672

Field-Initiated Studies (FIS)

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Title of Study: Supporting Young Children's Readiness for School Mathematics Through a Prekindergarten and Family Mathematics Curriculum

Principal Investigator(s): Prentice Starkey, Sponsored Projects Program, University of California, Berkeley, 336 Sproul Hall #5940, Berkeley, CA 94720, 510–642–3376

Funding Program: Field-Initiated Studies (FIS)

Funding Level: $606,699. Year 1 $196,245; Year 2 $202,660; Year 3 $207,794

Project Period: 10/01/96–09/30/99

Project Design: This project is examining the ways in which a preschool program can nurture young children's mathematical development and is using that information to develop a new prekindergarten mathematics curriculum. The curriculum will be organized by topical units, and each unit will include multiple sets of activities, often with upward and downward extensions to address individual differences in rate of mathematical development. The curriculum will be taught through a variety of instructional approaches. In the classroom, teacher-guided math activities, will be presented at Small Group Table to groups of four to six children. Child-directed group and individual activities, including manipulative-based and, for some units, computer-based activities, will also be available for children to use throughout the day.

This curriculum will be tested in low- and middle-income homes and preschools. The curriculum has two parts—one for teachers and one for parents. The project is studying the effects of the curriculum by determining if children who learn with the new curriculum in their preschool and home develop more extensive mathematical knowledge than children who do not use it.

The curriculum will be informed by the National Council of Teachers of Mathematics curriculum standards. Two of the critical foundations that young children need to develop in order to begin to learn elementary school mathematics are, in general terms, informal knowledge in the domains of numerical cognition (e.g., understanding how numbers are used to represent different quantities of objects) and spatial cognition (e.g., understanding directions such as a behind and above). The academic domain of mathematics spans these two cognitive domains. Both numerical and spatial/geometric reasoning develop considerably early in childhood. Therefore a variety of numerical and spatial/geometric activities will be included in the curriculum.

The project is evaluating different ways that parents and preschool teachers can teach the curriculum by sending questionnaires to teachers and parents, giving children concrete tasks, and observing teachers and children in classrooms.

In addition, teachers are learning the classroom-based component of the curriculum through workshops and a model classroom. Parents are learning the home-based component of the curriculum by attending Family Mathematics classes with their children at Head Start centers or preschool programs. After class, parents take home the mathematics kits and use sets of hands-on math activities provided by the Math Library.

To test the effects of the curriculum, children's developing math abilities will be measured before they enter the prekindergarten program and again in kindergarten. In addition, children who do not use the new curriculum will be tested before prekindergarten and in kindergarten. Child Math Assessments of the development of mathematical thinking in the children will be used. Teachers assessment, videotapes of the children will be part of the measures used.

Educational Significance of the Study: This project supports two National Education Goals—Readiness to Learn and Parent Involvement. At present, many children begin elementary school without the critical foundation in mathematics that is needed to learn advanced mathematics. This study will provide data on how, and to what extent, preschool teachers and parents are providing young children with opportunities to develop their mathematical knowledge. The study will also provide families and preschool teachers with a range of methods for helping young children come to kindergarten ready to learn mathematics.

Status of Study and Products: The first round of both the teacher and parent questionnaires are complete and data are being analyzed. The next round of questionnaires is in progress. Researchers have developed a Child Math Assessment and completed the baseline study of prekindergarten children. As a result, they now have information on the breadth and extent of young children's mathematical development on a set of 14 math activities. Eight curriculum units have been developed. Five units were introduced to teachers in the summer workshop and are currently being field tested. The remaining three units will be introduced in the winter workshop and will be field tested between February and May 1998.

OERI Contact: Joe Caliguro, 202–219–1596

Title of Study: Assessing the Effectiveness of Early Parenting Education and Support Through Home Visiting for Families with Young Children

Principal Investigator(s): Mary Wagner, Center for Education and Human Services, SRI International, 333 Ravenswood Avenue, Menlo Park, CA 94025, 415–859–2867

Funding Program: Field-Initiated Studies (FIS)

Funding Level: $664,209. Year 1 $182,051; Year 2 $240,617; Year 3 $241,541

Project Period: 09/15/96–09/14/99

Project Design: This project evaluates the impact on children and families of the Parents as Teachers (PAT) model on low income, urban children and families. This model involves a home visiting program and group meetings to teach parenting skills and support parents who have children from birth to age three. Previous research has suggested positive impacts on children and families but did not identify which program elements led to positive outcomes and did not include low income, urban families. Evaluators will ask the following questions:

- How effective is the program in helping low-income urban families support their children's learning and school readiness?
- Do the results vary for families with different characteristics?
- Do the results vary for families who have different program experiences (e.g., when they are in the program for different lengths of time and receive different numbers of home visits)?

The researchers are studying approximately 400 families in Wichita, Kansas and Newark, Delaware and comparing the outcomes for families who receive services from the PAT program with families from the same communities who do not receive those services. Parent educators began visiting half of the families during the first 8 months following a child's birth. This study uses field evaluators who will conduct assessments with participant and control group families in their homes at or around the children's first, second, and third birthdays.

At each annual assessment, field evaluators interview parents to obtain background information on the families and their activities. The parent is asked about the family's reading activities, such as how often he or she reads a newspaper or a magazine, and about other household activities, such as hours of TV watching. In addition, the parent is asked about activities that an adult might engage in with a child at home, such as singing with, reading to, looking at books with, or telling stories or nursery rhymes to the child. The parent is also asked about his or her knowledge of parenting practices and child development. The parenting knowledge questionnaire is tailored to the age of the child at each assessment and includes, among other topics, several agree/disagree statements regarding literacy and language development. At each yearly assessment, field evaluators also ask about important family characteristics, such as family employment and the number of adults and children in the family.

The researchers will measure parent-child interactions and will use three standardized instruments to measure children's cognitive, language, social, motor, and self-help development at the children's second and third birthdays. SRI plans to continue to study the children's development and learning through kindergarten and will share the findings with OERI.

The Robert Wood Johnson and Smith Richardson Foundations are funding similar projects in Winston-Salem, North Carolina and Fort Worth, Texas.

Educational Significance of the Study: Approximately 1,800 Parents as Teachers programs are operating in 45 states and the District of Columbia to help parents support their young children's learning. This study will provide information on the effectiveness of the PAT model in helping families in low income and urban areas promote the development, learning, and well-being of their children. Knowledge will be gained regarding how the length of time in the program, turnover in staff, or attendance at group meetings affects families' outcomes.

Status of Study and Products: The Parents as Teachers program in Wichita recruited 225 families and the program in Newark recruited 169 families. The evaluators have begun assessing parenting skills as the children reach their first birthdays.

OERI Contact: Donna Hinkle, 202–219–2172

Title of Study: An Experimental Examination of the Effectiveness of a Social Competence Curriculum with Toddler Age Children Who Have Disabilities

Principal Investigator(s): Mary Beth Bruder, University of Connecticut Health Center,
309 Farmington Avenue, Suite A–200, Farmington, CT 06032,
860–679–4632

Program: Field-Initiated Studies (FIS)

Funding Level: $760,124. Year 1 $241,746; Year 2 $254,515; Year 3 $263,863

Project Period: 10/1/96–9/30/99

Project Design: This project is testing a new way to teach social skills to toddlers with disabilities. The study involves 50 toddlers with disabilities who attend child-care centers side-by-side with children who show no signs of developmental delays. Teachers and parents have learned to use the curriculum to teach social skills to 25 of the toddlers. The other 25 toddlers are using Connecticut's regular child-care curriculum.

The project is studying how all children play with other children at age two, before they receive the curriculum, and again at ages three and three and a half after they have received the new curriculum. A follow-up evaluation will take place at 42 months to assess the long-term effects of the new curriculum. That evaluation will examine the development and social competence of the child, the quality of the adult-child interactions in the family, and the overall quality of how the new curriculum serves the children.

Educational Significance of the Study: Children with disabilities are often excluded from group settings because they do not know how to play and get along with other children and adults. Therefore, the information from this study has the potential to make it possible for more children to take part in inclusive activities.

Status of Study and Products: In the first year, parents and teachers are using the new curriculum with nine toddlers. There are eight toddlers in the comparison group. During the second year, recruitment of children and families will continue. Data collection on the 17 enrolled children will continue.

OERI Contact: Donna Hinkle, 202–219–2172

Title of Study: The Role of Family and School in Promoting Positive Developmental Outcomes for Young Children in Violent Neighborhoods

Principal Investigator(s): Suzanne M. Randolph, Department of Family Studies, University of Maryland at College Park, College Park, MD 20742, 301–405–3672

Program: Field-Initiated Studies (FIS)

Funding Level: $250,000. Year 1 $71,729; Year 2 $81,033; Year 3 $97,238

Project Period: 07/01/96–06/30/99

Project Design: Although educators recognize the potential negative effects of community violence, there has been little empirical research examining ways in which schools and parents can effectively reduce the stress that violence imposes on young children. This study examines the effects of neighborhood violence on preschoolers, the role of family and schools in reducing its impact, and the effectiveness of early childhood antiviolence interventions. The study determines the effects of exposure to community violence on preschoolers' cognitive, motor, and socioemotional development. It is using a sample of 104 African-American families with children in Head Start Centers in the Washington, DC metropolitan area.

Approximately half of the centers are located in neighborhoods with high rates of violence and half in neighborhoods with low rates of violence. Of the children attending the centers, 49 percent come from low violence areas and 51 percent come from high violence areas. The children who actually participate in the study will be mapped by residence to establish more exact data.

Children are being assessed in five developmental areas: learning and understanding, speech and language, motor skills, socioemotional development, and the ability to adapt. Data are being collected from parents and teachers about the children's behaviors and social competence. To determine the strategies parents use to protect children from violence and help them deal with violence-related stress, parents are being interviewed about their family life, social support networks, perceptions of community violence, and depressive symptoms.

The study also is developing and evaluating the impact that a new intervention might have on preschoolers' abilities to cope with violence around them. The children's teachers and parents are learning the activities in the intervention in order to measure the effects of interventions on the children. In year two of the study, focus groups will examine both parents and teachers to determine which groups should receive the intervention. Currently, teachers are scheduled to receive the intervention, but the focus groups may choose to in include the parents in the intervention too.

Educational Significance of the Study: Findings are intended to provide early childhood professionals and parents with strategies and a tested intervention program to help young children prepare for and cope with community violence.

Status of Study and Products: Data collection for the first year is complete and collection for the second year is in progress. Findings indicate that a large portion of mothers in the sample, regardless of the degree of violence in which they live, have witnessed some type of violent crime, and over one-third of parents have heard gun shots in the neighborhood. Due to developmental issues that surround four-year- olds, information regarding children's exposure to violence will only be reported by parents. How parents protect their young children from exposure to violence varies according to the type of neighborhood in which they live.

The most common strategies described by mothers included: restricting children's contacts in the neighborhood, providing constant close physical supervision, teaching practical household safety skills, developing a structured home environment, and prayer and positive thinking.

The research is finding that some of the safety information mothers attempted to teach children was beyond children's level of cognitive development. Children have little opportunity to build their motor skills because they were constantly confined to their apartments. Many mothers stated that they felt alone in their struggle against community violence, feeling an absence of support from neighbors and early childhood educators.

During the second year of the project, focus groups with parents and teachers are being conducted to collect data on their strategies for protecting children from harm in high violence neighborhoods. These qualitative data will be used to develop culturally sensitive instruments to assess parenting strategies. Also during the second year, researchers will use these data to design a Head Start center-based intervention program focused on helping families cope with community violence. This intervention will be implemented and evaluated in Year 3 of the project.

Products include the following:

An article, *The Role of Family and School in the Development of African-American Preschoolers in Violent Neighborhoods*, by project staff has been accepted for publication in the *Journal of Negro Education's* special edition, "Educating Children in a Violent Land."

OERI Contact: Joe Caliguro, 202–219–1596

Title of Study: Early Childhood Education Home-School Portfolio Project

Principal Investigator(s): Jeanne R. Paratore, Boston University, 605 Commonwealth Avenue,
Boston, MA 02215, 617-353-3285

Program: Field-Initiated Studies (FIS)

Funding Level: $619,091. Year 1 $207,152; Year 2 $204,004; Year 3 $207,935

Project Period: 10/01/96-09/30/99

Project Design: Despite consensus that parents are essential to children's early learning, questions remain about how to establish collaborative relationships between parents and teachers. These problems may be accentuated with immigrant families, when the culture of the home is different from the culture of the school. Recent research shows that children from families who are linguistically and culturally diverse engage in rich and important literacy practices at home. Too often these literacy activities are either unfamiliar to, or go unrecognized by, the children's early childhood and elementary school teachers. As a consequence, these children are often perceived as entering school with literacy and language deficits and their parents are often thought to be disengaged or disinterested in their children's schooling.

This project is building a home-school partnership between an intergenerational literacy program serving immigrant families and an early childhood education program through the use of home- and school-based literacy portfolios. Both programs are components of the Boston University/Chelsea Public Schools Partnership. This project studies how to create a bridge between children's home and school. It provides immigrant parents with a systematic way to document their children's home literacy experiences and engages parents and teachers in conversations about children's literacy learning at home and at school. In addition, it is evaluating how well these techniques are working.

The project has three core activities: (1) during family literacy classes, parents share the ways they promote the learning of language, reading and writing at home, discuss new ways to share these with their children, and learn to document their children's uses of emergent reading and writing in a family literacy portfolio; (2) during after-school seminars, early childhood and primary-grade classroom teachers explore the ways families use literacy in the course of everyday activities and ways to build on family routines to support children's emergent language development and learning in school; and (3) during conferences, parents and teachers exchange children's home and school literacy portfolios as a way for each to learn about how children use literacy at home and at school.

During the first year of this 3-year project, 30 parent-teacher pairs participated in these labor intensive activities. Researchers examined the results from parent and teacher questionnaires with all 30 groups, conducted and examined a series of 3 indepth interviews with a random sampling of 10 pairs, and examined audiotapes of 2 parent-teacher conferences for each of the pairs. Part of the research looks at changes in parents' attitudes. What influence do the project activities have on parents' beliefs and understanding about their role in schools? In addition, teachers' beliefs and understandings about the role that parents play in their children's schooling are being documented, as well as changes in parent-teacher interactions and changes in teacher-child interactions.

Educational Significance of the Study: This project will add to existing knowledge on home-school collaborations in early childhood education by helping early childhood teachers learn about the ways in which young children and their families use literacy activities at home. They also will learn how to integrate better school activities and build on home support to improve children's learning. In addition, it will offer strategies for immigrant families to use when learning about American schools and the ways that families can support their children's learning.

Status of Study and Products: An examination of partial data sets suggests some encouraging preliminary findings:

- Teachers were surprised at the quality and range of reading and writing activities in which children engaged at home on their own and with family members.
- Some teachers observed that children were doing academically more advanced work at home, and they revised classroom instruction accordingly.
- Some teachers used creative activities in the classroom that parents had used at home.
- Parents said that the family literacy portfolio increased the children's home literacy.
- In some cases, the portfolios provided evidence that recommendations made by teachers had been incorporated within the family's daily routines.

OERI Contact: Carol Sue Fromboluti, 202–219–1672

Title of Study: Individualizing Developmentally Appropriate Practices (DAP) for Preschool Children with Disabilities

Principal Investigator(s): Gerald Mahoney, Family Child Learning Center, Children's Hospital Medical Center, 143 Northwest Avenue, Bldg. A, Talmadge, OH 44278, 330–633–2055

Program: Field-Initiated Studies (FIS)

Funding Level: $612,596. Year 1 $210,497; Year 2 $202,862; Year 3 $208,237

Project Period: 10/01/96–08/30/99

Project Design: The purpose of this project is to compare two different ways of teaching children with disabilities by building on their strengths. The first approach takes the traditional Early Childhood Special Education (ECSE) curriculum and combines it with elements of the Developmentally Appropriate Practices (DAP) curriculum. In this type of approach, the teacher leads the class through a set of activities, giving children limited choices for what they can do that day.

In the second approach, only DAP will be used. That means that children have several activities from which to choose each day. The teacher provides guidance in their chosen tasks. This model is most commonly used in preschool classrooms, but it is not used frequently with special education populations. This study will shed light on how the DAP approach might best be used with children with disabilities.

This research project is examining four issues related to these approaches. First, it is looking at how these different teaching methods affect how teachers work with children, the daily activities of the classroom, how they prepare Individualized Educational Plans (IEP), and the amount of one-on-one time spent with children during the school day. Second, it is determining if these different ways of teaching affect how much children participate in instructional and social activities. Third, it is determining how these alternative approaches affect several child outcomes, including IEP goals, developmental accomplishments, and parent-child interaction. Fourth, it is looking at how classroom, teacher, and child variables influence the ability of teachers to address the individual learning and developmental needs of children with disabilities. As noted above, this study pits traditional special education curriculum against a DAP only model. It may be that children in the DAP only classrooms will achieve at the same or a higher rate than those in the more traditional classrooms, and at the same time develop a greater ability to self-regulate their learning and social behaviors. Alternately, the DAP only classroom may not provide sufficient structure for children with disabilities, making it more difficult for them to function in this type of classroom environment.

Educational Significance of the Study: This project will test the value of using partial or full Developmentally Appropriate Practice curriculum models with young children with disabilities. It will also provide early childhood educators with information for improving the quality of the educational experiences provided to children with disabilities in inclusive settings.

Status of Study and Products: During the past year, 23 teachers were recruited and trained to participate in the first cohort of this study. Fifteen of the teachers are implementing the traditional classroom model (ECSE), and 8 are implementing the DAP curriculum. There are currently 50 children who will be followed for the next 2 years.

Twenty-five additional teachers are currently being recruited for a second study group. In February of 1998, training will take place to prepare these teachers for the study which begins in September of 1998. These teachers and their students will be followed for at least 1 year. A total of 180 children and 48 teachers will participate in the study.

A Developmentally Appropriate Practices training manual has been developed. This manual discusses the rationale and purpose behind the DAP approach and strategies for teachers on how to individualize their curricula, environment, materials, and activities to meet the needs of all children in their classroom. The manual contains background materials, hands-on training exercises, and forms teachers can use to evaluate how DAP guidelines can be applied to their own preschool classrooms. A brochure also has been developed to inform early childhood professionals about the availability of the DAP curriculum materials and potential training opportunities.

Five workshops have been conducted to train teachers and other professionals on the DAP curriculum. A total of approximately 200 preschool teachers, teacher assistants, and speech/language therapists have participated in these workshops. To date, 110 requests for the DAP manual and training materials have been received. These materials are being distributed to all who request them for the cost of reproducing these materials. Further training opportunities/workshops are being arranged.

OERI Contact: James Griffin, 202–219–2168

Title of Study: Improving Educational Readiness Through Theory-Based Interventions Focused on Enhancing Resilience for Our Youngest At-Risk Children

Principal Investigator(s): Mark Innocenti, Early Intervention Research Institute,
Utah State University, CPD Annex #1, Logan, UT 84322–6580,
801–797–2006

Program: Field-Initiated Studies (FIS)

Funding Level: $718,935. Year 1 $223,872; Year 2 $247,416; Year 3 $247,647

Project Period: 10/01/96–09/30/99

Project Design: The purpose of this study is to design and put into use a home-visiting model that builds resilience in children and families from disadvantaged backgrounds. In the traditional home-visiting model, professionals try to remediate deficits. This model focuses on the child's strengths. This study tests the effectiveness of this resilience model in four existing home visiting programs in Utah.

Research on the topic of resilience has identified a number of early childhood factors that predict better academic and educational outcomes for children. Primary among these factors is the presence of a strong attachment relationship and a history of positive parent- (care giver) child interaction. This project is collaboratively developing an intervention model, referred to as the mutual competency model. The model focuses on family strengths to improve maternal attachment and positive parent-child interaction.

This project is working with four home visiting programs that serve infants and toddlers in primarily low-income families. These target programs are part of the Utah Families, Agencies, Communities Together (FACT) initiative, a state funded effort focusing on providing service coordination and collaboration for those families most at risk. Each of the target programs is individually designed in order to meet each community's needs. Project staff provide training, support and regular interaction with each of the target programs.

Fifteen infants have been enrolled from each of the four sites as target children. There are 24 children in the comparison group; half are 1 year old and the other half are 2 years old. All participating families will take part in extensive periodic interviews, children will receive complete developmental assessments, and those in the treatment group will receive weekly home visits. These assessments and interviews are labor intensive and involve travel to homes in rural Utah.

Research questions address current home visiting practices, changes in practice as a result of intervention, and home visitor satisfaction with the model. The study is examining how the program model affects child development, maternal attachment, parent-child interaction, and family routines. Parent satisfaction also is being addressed. A secondary focus of the project is a longitudinal follow-up of children enrolled in Utah FACT (infant to preschool) programs. These data will provide important information on the best way to bring community agencies together to provide coordinated services to young children.

Educational Significance of the Study: This project will provide detailed information about the different approaches implemented in each of the participating communities and demonstrate how resiliency can be fostered in young children and families considered at risk. It will provide several contributions to theory, the knowledge base, and the effectiveness of different intervention approaches for children environmentally at risk.

This study is directly examining the applicability of using community-based services as part of the intervention, and will be able to address a number of current issues in the areas of resilience, attachment, maternal sensitivity, and home visiting. If successful, the model should have long term positive impacts on the academic achievement and behavioral and social outcomes of involved children.

Status of Study and Products: This project has just begun its second year. The follow-up study of children in the Utah FACT program is near completion. Implementation of the program and related research has been going more slowly than anticipated due to unexpected problems at the state and county levels.

OERI Contact: James Griffin, 202–219–2168

Title of Study: Promoting Children's Language Development in Head Start Classrooms: Explorations with Collaborative Research Teams

Principal Investigator(s): Jeanne Wilcox, Infant-Child Communication Research Programs,
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602–965–9397

Program: Field-Initiated Studies (FIS)

Funding Level: $607,046. Year 1 $199,720; Year 2 $198,998; Year 3 $208,328

Project Period: 09/30/97–09/30/00

Project Design: This study is a collaborative effort between Arizona State University's Infant-Child Communication Research Programs and Southwest Human Development. The latter is a private, nonprofit agency that provides comprehensive services, including Head Start, to young children and their families.

The overall purpose of the project is to develop and test a new approach designed to bring specific language skill-building activities into preschool children's everyday lives. In addition, the study is documenting if partnerships among the children's parents, Head Start teachers and aides, and university researchers make a difference in the children's language development. Specific research questions to be investigated include:

- How best might language skill-building activities be incorporated into everyday Head Start classroom activities?
- How might these activities be linked with the children's homes and family activities?
- How effective are collaborative research teams? and
- Can these language activities be replicated in other preschool classroom?

All research activities take place in Head Start classrooms operated by Southwest Human Development (SHD). Sixty children will be selected from SHD's 28 classrooms serving 520 children. The study has four phases: (a) identification of key issues and desired outcomes; (b) research action plan; (c) analysis and review of results; and (d) replication and product development.

In this study, Head Start teachers are trained to be researchers and to participate in all phases of the study, including how to document changes in the children's language behavior. Later in the study, the classroom activities will be replicated in other Head Start classrooms. In this phase, children will be randomly assigned to either the replication or to control conditions. The participants will be recruited from among the 126 classrooms and 2,500 children served in Head Start classrooms operated by the City of Phoenix.

Educational Significance of the Study: The goal of the research is to provide information on how teachers and parents can effectively use language skill-building activities with young children. The results have implications for improving the ways in which early childhood educators and families talk to young children in order to improve overall language usage and understanding. Both of these are skills that children need in order to do well in school. In addition, this study will add information on how to effectively use teachers as researchers so that they can document how new classroom practices actually affect children's learning and teachers' behaviors.

Status of Study and Products: This study was funded in October 1997. In an effort to expand the number of children taking part in the study, the grantee applied for and received a grant from the Head Start Bureau. Those funds will be used to investigate another aspect of early learning and development, but many of the children also will take part in the Early Childhood Institute's project.

OERI Contact: Naomi Karp, 202–219–1935

Title of Study: Assessing Low-Income Children's Changing Environments and Effects on School Readiness

Principal Investigator(s): Bruce Fuller, University of California-Berkeley School of Education, PACE, School of Education, 3653 Tolman Hall, Berkeley, CA 94720–1670, 510–642–7223

Program: Field-Initiated Studies (FIS)

Funding Level: $502,119. Year 1 $164,682; Year 2 $167,393; Year 3 $170,044

Project Period: 10/01/97–9/30/00

Project Design: This project will track children's home and child-care environments during welfare reform and track their development related to school readiness. Since welfare reform applies to all families who receive case assistance, a comparison group is not possible.

The research will take place in two low-income neighborhoods in Tampa, Florida. Approximately 250 unmarried mothers who have at least 1 preschool-age child and meet eligibility requirements for welfare will take part in the study. Researchers will conduct two home visits when the children are three and four years old. Using standardized checklists, rating scales, and interview formats, the researchers will determine if and how home environments and mothers' time and activities with the children change over a 30-month time period due to new federal and state requirements for welfare recipients to work and maximum lifetime limits for receiving welfare assistance.

In order to get a picture of what the children's child-care settings are like, the researchers will interview the children's child-care providers by telephone. They then are going to observe in the child-care settings, using standardized checklists and rating scales in order to evaluate the quality of the child care. They will compare child-care providers' answers about the quality of the child care with project staff's observations in the child-care settings. From these comparisons, they are going to determine which interview questions are most strongly related to the standardized checklists and rating scales.

The researchers will measure children's preliteracy, social, and language development, which are related to school readiness, over the 30-month period and relate their development with their home and child-care environments.

Researchers will compare study results in two communities each in Florida, California, and Connecticut. Welfare policies in these three states are different. Along with the Early Childhood Institute, the Florida Department of Education, the Florida Children's Forum, and the Spencer Foundation are providing funds for this project in Tampa. The Packard and Hewlett Foundations are funding the same project in California, and the federal Child-Care Bureau is funding the project in Connecticut.

Educational Significance of the Study: The first national education goal, by the year 2000 all children in America will start school ready to learn, is backed by specific objectives: all children will have access to high quality preschool programs, and every parent will be a child's first teacher and devote time each day helping his or her preschool child learn. In reality, children's access to high quality preschool programs depends on where they live. As single mothers who receive welfare assistance are required to work, they may spend less time helping their preschool age children learn, and children's learning may become more dependent on child-care providers. By determining if home and child care changes occur that affect school readiness, the research will provide information that may lead to improved policies and practices for serving low income children who are at high risk of school failure.

The project will also help researchers develop telephone interview questions for child-care providers that more accurately measure the quality of child-care settings, which is important to the school readiness goal.

Status of Study and Products: The principal investigator has coordinated with research partners in Florida to identify the Tampa neighborhoods where the study will be conducted and to establish procedures for collecting information.

OERI Contact: Donna Hinkle, 202–219–2172

Title of Study: Parenting Through Play for School Readiness

Principal Investigator(s): Harvey Beeline, The Media Group of Connecticut, 70 Birch Hill Road, Wesson, CT 06883–1712, 203–277–7555; and Prof. Jerome Singer, and Dr. Dorothy Singer, Yale University, Department of Psychology

Program: Field-Initiated Studies (FIS)

Funding Level: $287,199. Year 1 $99,038; Year 2 $188,161; Year 3 $287,199

Project Period: 10/1/97–9/30/99

Project Design: This research is identifying the key elements of successful parent and care giver education programs and developing, testing, and refining a video-based program for use by organizations that serve and train low-income families with preschool children. The video will demonstrate how to engage three- to five-year-old children from low-income families in highly motivating play techniques that research has shown to strengthen children's cognitive, social and motor skills that are part of school readiness.

The curriculum being developed will be tested with experimental and control groups of low-income parents and care givers. The curriculum consists of a short training video and printed handouts with instructions that help parents learn to play developmental games with their children. The study will measure preschool children's readiness skills before and after intervention. The program will be refined accordingly and then tested with a demographically-diverse, representative national sample. The complete video-based training program (2,500 copies) will be distributed to key organizations that serve low-income families nationally. To ensure that the most appropriate recipients of free programs are chosen, prior to dissemination a mailing with a reply card will be sent to all potential recipients. They will be asked to return the card indicating their request for this program, and their assurance that they will participate in its national evaluation. An online web site will be established and a national evaluation will be conducted.

By disseminating free copies of a tested training video and the accompanying printed manual, the project will help to train large numbers of parents and care givers in simple, effective techniques to improve low-income children's school-readiness skills.

Over 100 families have been recruited with the expectation that a minimum of 40 families will be in the comparison group and 40 families will be included in the study group. As an ethical consideration, after completing testing with the study group, the same full training will be given to families in the comparison group. This will also afford the project the opportunity to modify the curriculum in year one and then test the refined version with the comparison group in year one.

Educational Significance of the Study: This project will improve early childhood learning by fully applying video, text, graphics and online media to develop and test a low-cost, easily replicable program to train parents and care givers of low-income preschoolers. The goal is to foster children's readiness skills, through proven techniques such as those presented in the *Ready*Set*Read Early Childhood Learning Kit,* which is part of the *America Reads Challenge.*

Status of Study and Products: This project started on October 1, 1997. A detailed plan of operation was forwarded to the Early Childhood Institute and several start-up meetings have taken place at the Yale Family TV Center.

OERI Contact: Joe Caliguro, 202–219–1596

Title of Study: Home Activity and Play Intervention

Principal Investigator(s): Cordelia Robinson, University of Colorado Health Sciences Center, 4200 E. 9th Avenue, Denver, CO 80262–0234, 303–315–5209

Program: Field-Initiated Studies (FIS)

Funding Level: $673,616. Year 1 $224,160; Year 2 $224,572; Year 3 $224,885

Project Period: 9/1/97–8/31/00

Project Design: This research is developing, putting in to use, and evaluating an early intervention service that will nurture young children's developmental progress and intellectual growth. The research is studying how children's play activities, family routines, and increased parental involvement can be used to improve the learning of children with developmental delays. Historically, coordination of intervention services for children with developmental disabilities has been hindered by a number of barriers. In particular, professionals often value their "own" intervention goals and strategies and focus on specific treatment techniques. Often these techniques do not fit in with the children's and families' everyday activities, resulting in stress for everyone. Therefore, this project is blending prescribed interventions and play activities into the child's and family's typical daily routines. The research will answer this question: Will the new service delivery model result in more developmental gains for the children and increased family satisfaction and reduced stress?

This labor intensive intervention will involve 54 children and families who will receive services that are individually tailored through the Home Activity and Play Intervention (HAPI) model. Infants and toddlers (zero to three) with disabilities, who have not received any prior home intervention services, will be eligible to participate in the study. Intervention strategies will be devised within the context of family routines, based on family identified concerns and priorities. TIP sheets will be developed for each child and family, as a basic guide to intervention. All developmental domains will be integrated into the intervention strategies. It is anticipated that families will desire varying levels and types of support. The project will utilize a variety of methods for supporting families including, demonstration; feedback session on videotapes of child; commercial videotapes; photographs to illustrate suggestions; written material; face to face problem solving, and phone communication.

Entry and exit data will be collected and compared to a contrast group of 54 children who will receive intervention through currently existing, prescribed services.

Educational Significance of the Study: The results of this study have implications for including children with developmental delays and disabilities in general education and community activities. Too frequently, children are excluded from these environments because they may require special exercises, special equipment, and other accommodations. Improving methods for applying and incorporating needed accommodations and services to the everyday activities of children with developmental delays also increases the opportunities for inclusive education, positive social experiences, and community participation.

Status of Study and Products: The project is the first year of funding. So far, the service model is being refined; staff are on board and staff development is taking place; eligible children and families are being recruited; and the HAPI model is being presented to early childhood professionals.

OERI Contact: Carol Sue Fromboluti, 202–219–1672

Title of Study: The Effects of Discrepancies in School Readiness Expectations on Young Children Living in Poverty

Principal Investigator(s): Dr. Chaya S. Piotrkowski, Fordham University Graduate School of
Social Service, 113 West 60th Street, New York, NY 10023,
212-636-6652

Program: Field-Initiated Studies (FIS)

Funding Level: $340,779. Year 1 $145,020; Year 2 $194,859

Project Period: 10/1/97–9/30/99

Project Design: To help prevent school failure, communities need to be partners in bringing about children's successful transition to elementary school. Frequently, there is limited communication among parents of preschool children, preschool teachers, and kindergarten teachers regarding their expectations of what skills, behaviors, and attitudes young children need to have when they enter school.

This study addresses the issue of diverse expectations about a child's transition to school. It examines the extent to which inconsistencies in what parents, preschool teachers, and kindergarten teachers expect of children influences both the children's transition to school and their kindergarten teachers' assessment of their readiness. Currently, little is known about how the attitudes and expectations of parents of young children living in poverty match those of their preschool and kindergarten teachers, and how similarities and differences in these expectations may positively or negatively affect the school careers of these children.

New York City school districts where at least half of the children receive free lunch and include Hispanic and African-American families will be selected for the study. The final sample will be approximately 85 target children. The study sample also will consist of the parents, preschool and kindergarten teachers of these children—approximately 165 adults.

Questionnaires and focus groups will be prepared to develop a culturally appropriate measure of expectations for school readiness. This questionnaire will be given to the parents, preschool, and kindergarten teachers of the target children. In addition, information will be gathered from parents about children's transition to kindergarten and from children's kindergarten teachers about their school readiness. Analyses will focus on the differences in what parents and teachers expect from children as they enter school. The study will examine how differences in parents' and teachers' expectations predict parents' reports of how easily a child made the transition to kindergarten, and kindergarten teachers' ratings of a children's school readiness.

The study uses a collaborative, community-based model of research that directly involves parents, preschool and kindergarten teachers in the study. There will be a 10-member advisory panel composed of preschool directors, the district school superintendents, and representatives of the community school boards, parent groups, and teachers' and principals' unions. In addition, a 12-member research working group composed of the research team, parents of preschoolers, preschool teachers, and kindergarten teachers will help guide the study, ensuring that the research is culturally sensitive and responsive to local concerns.

Educational Significance of the Study: This study will help parents, teachers, and school administrators understand the impact of inconsistent school readiness expectations on children's transition to school. The results of this study will be used by low-income communities to target educational and outreach efforts to preschools and to parents of preschoolers; to identify concrete policies and procedures that ease transitions to kindergarten; and to put into place procedures that promote communication among key adults in young children's lives.

Status of Study and Products: This study began in October 1, 1997. To date, researchers have hired a full-time bilingual administrator/research assistant; started developing a measure of school readiness expectations; gathered data from the Census Bureau of the New York City Board of Education in order to identify two school districts that meet the poverty criteria for the study and that would be interested in participating; initiated meetings with key groups that can facilitate access to schools and preschools; and developed a project information sheet in English and Spanish.

OERI Contact: James Griffin, 202–219–2168

Title of Study: Engagement as an Outcome of Program Quality

Principal Investigator(s): R. A. McWilliam, University of North Carolina-Chapel Hill,
Frank Porter Graham Child Development Center, CB# 180,
Chapel Hill, NC 27599–8180, 919–966–7485

Program: Field-Initiated Studies (FIS)

Funding Level: $675,000. Year 1 $225,000; Year 2 $225,000; Year 3 $225,000

Project Period: 10/01/97–09/30/00

Project Design: The purposes of this study are to:

- determine how young children in child-care centers spend their time, or are actively engaged in different activities with other children, with adults, and with materials and toys;
- study the child's level of engagement in terms of the quality of the center;
- investigate the level of engagement in relation to the child's individual characteristics, such as age and temperament;
- study the level of engagement in relation to family characteristics, such as home environment and socioeconomic level; and
- understand the relationships between and among the factors in child-care settings that contribute to how children adapt, communicate, interact, and learn.

The study will include 68 infants and toddlers and 68 preschoolers who are in 17 child-care centers in North Carolina for at least 6 hours a day. At the beginning and the end of the study, researchers will use standardized checklists to assess the children's abilities, the quality of the child-care centers, and the care givers' behavior styles with the children. In addition, they will use an observation sheet that they have developed to record the amount of time children spend interacting with adults, peers, and materials. The different interactions are then coded on a scale that ranges from "not engaged" to "persistent."

The researchers are using a comprehensive methodology to document details about the children, families, and centers. They are using four questionnaires with families, observing each child on 4 occasions for 15 minutes each, using a standardized instrument to assess each child's personal-adaptive, social, motor, communication, and cognitive development, and using a detailed environmental rating scale to rate center quality. These activities require indepth analyses and considerable amounts of staff time.

Educational Significance of the Study: Recent neuroscience findings indicate that enriched language and sensory experiences and opportunities and consistent, engaging relationships are essential for young children's development and learning. However, research studies have documented that the majority of infant and toddler child care in the United States is of extremely low quality. In addition, high quality, affordable, available child care for preschoolers, in general, is rare. Information from this study has the potential to improve the quality of child care. It will describe what children do in centers of varying quality, including information about how different children become engaged and how the quality of the center affects that engagement. This information can be used to improve the ways in child-care providers are trained to work with infants, toddlers, and young children.

Status of Study and Products: This project began October 1, 1997. The child-care centers that will take part in the study have been identified.

OERI Contact: Donna Hinkle, 202–219–2172

Small Business Innovation Research (SBIR)

Title of Study: *Parent-Child Video-Print Mentoring Packages*

Principal Investigator(s): M.L. Johnson, Wolf River Productions, 1056 Rockafellow Court,
Canon City, CO 81212, 907–482–4979

Program: Small Business Innovation Research (SBIR)

Funding Level: $50,000

Project Period: 09/30/97–03/29/98

Project Design: This project will create and field-test instructional materials to help parents guide their children's language learning. It is targeted to the parents of children between the ages of birth to age four and is designed to help establish a basis for later language and phonics. The project will develop and test the effectiveness of a videotape and text to instruct parents on how to encourage their children's early learning and development. The video will be "user friendly" and accessible to parents, while the instructional materials will provide parents with field-tested self-help materials necessary for giving children an early educational start. Virtually all of the information on the video is reinforced in the written materials and the video will support the materials with visual examples.

Scripted videotape-print packages can be used in a variety of settings; from home to small support groups. The first five tape packages will focus on early childhood needs such as amount and quality of language, interactive language with parents, reading with children, that are identified by a field-level consultant.

Educational Significance of the Study: By using video-print educational packages, parents can mentor their children in a variety of learning tasks, from basic school preparation to enrichment skills. These materials will provide families with information on parenting skills. All parents are potential consumers. Voice-over video and print materials will be available in English and Spanish.

Status of the Study and Products: Researchers and consultants have provided the basis for the three print books and the framework for the videos. The video was scheduled to be shot December 1–4, 1997. Four mother-child models have been recruited and trained. Studio footage will be shot in the local cable television facility. Post-production video work will begin immediately after the studio and location shooting is completed.

OERI Contact: Joe Caliguro, 202–219–1596

Title of Study: Tap-N-Sing: Personal Computer Software to Foster Early Childhood Development and Education

Principal Investigator(s): Scott Houston, Muse Technologies, 11715 Fox Road, Suite 400/212,
Indianapolis, IN 46236, 317–826–8050

Program: Small Business Innovation Research (SBIR)

Funding Level: $50,000

Project Period: 09/30/97–03/28/98

Project Design: This project will develop a way to engage children in early reading skills and motivate them to continue reading. Tap-N-Sing allows young children to control the display of words on a computer screen by simply tapping a finger on a computer keyboard that is synchronized with songs. The project builds new knowledge about the relationship between the interactive Tap-N-Sing approach and early childhood reading practices. The project will test methods and instrumentation for verifying the influence of Tap-N-Sing usage on early childhood reading ability and will further the development of Tap-N-Sing as a commercially viable educational tool for parents and classroom teachers alike.

Educational Significance of the Study: The results from this project will provide data to understand the potential effectiveness of using the Tap-N-Sing prototype in the development of early childhood reading skills. It can be used in both school and at home.

Status of Study and Products: The primary focus of the project so far has been on the review portion of the research and organizing and conducting user studies. A protocol and a questionnaire have been designed to guide the expert reviewers through the process. Software packets are being revised and telephone interview are scheduled. The project is also conducting focus groups and completing a significant portion of their user studies. In December, an analysis of work done to date will expose any needed software programming changes in preparation for the pilot study early in 1998.

OERI Contact: Joe Caliguro, 202–219–1596

Title of Study: Using the Internet to Supplement Early Childhood Learning and to Support Parents, Teachers, and Child-Care Providers in Furthering that Learning

Principal Investigator(s): Paula D. Munger, Munger Academy, Inc., 1437 Crowell Road
Vienna, VA 22182, 703–430–2781

Program: Small Business Innovation Research (SBIR)

Funding Level: $50,000

Project Period: 09/30/97–03/29/98

Project Design: This project will develop and test prototype communications and educational programs that can be accessed via the Internet. The programs to be developed include one for parents on parenting skills; a program for teachers that will allow them to produce additional educational software programs that can be delivered to students on the Internet; and a resource center for child-care providers that can be accessed at either center-based or home-based locations.

Educational Significance of the Study: The anticipated results include: parenting skills and computer skill development programs deliverable via the Internet; Internet-delivered software programs suitable for the physical, social, emotional, and cognitive development of children ages two through eight; and the development of an Internet resource center for center-based and home-based child-care providers. The program should make Internet-delivered early childhood programming easily accessible by parents, teachers, and child-care providers. The lessons learned about the effective development of such programming should make the development of commercially-profitable, Internet-delivered training for young children much more attractive to many organizations.

Status of Study and Products: The "Parenting Skills" course objectives have been established and the topic of "Discipline" will be the concentration of the course. Through computer conferencing, the course will explore several different approaches to discipline and share experiences and expertise of others in the field, as well as teachers and parents. The amount of communication by e-mail among the parents, students, and teachers continues to be monitored. Focus group sessions on computer skill levels have been completed. Several parents have been provided with Internet-capable computers. On Saturday, November 22, 1997, a team of parents ran cable throughout the school. In the near future the project will develop the parenting skills course, continue the computer course objectives and outline and present these to the focus group, and the project staff will present the completed supplemental courses to the rest of the staff. Development of the Web site will continue. Classrooms will have access to the Internet.

The Web site for Munger Academy is on the Internet. The address for the site is *http://members.bellatlantic.net/~macademy*.

OERI Contact: Joe Caliguro, 202–219–1596

Title of Study: Interactive Multimedia to Enhance Parenting Skills of Adolescents and Adults with Young Children

Principal Investigator(s): Russell J. Churchill, American Research Corporation of Virginia,
P.O. Box 3406, Radford, VA 24143–3406, 540–731–0655

Program: Small Business Innovation Research (SBIR)

Funding Level: $50,000

Project Period: 09/30/97–03/28/98

Project Design: This project will develop and evaluate a program to enhance parenting skills of adolescents and adults with children ages two to four. In this program, text, graphics, and audiovisual media are combined with a computer-based information retrieval system. This type of program is called "interactive multimedia," or IM. IM allows the user to choose the segment of instruction he or she wishes to receive and to interact with the learning program. This study will develop the interactive multimedia program which can be used as a model for the development of additional instruction.

The overall goal of the research program is to find out if putting Interactive Multimedia (IM) technology with computer-assisted instruction increases the parenting skills of adolescents and adults with children ages two to four. At the conclusion of the study, an evaluation of the effectiveness of the program will be conducted.

Educational Significance of the Study: The primary result of the project will be a comprehensive instructional program that will be evaluated with respect to changes in knowledge, attitudes, and behavior of adults and adolescents with children ages two to four..

Status of Study and Products: Work so far on the project has focused on the writing of scripts and the design of the user connection. Since the public's computer proficiency is diverse, the program is being designed for first time computer users.

The layout of text, buttons, information, and ways to navigate through the program are being developed according to industry standards or recommendations.

OERI Contact: Joe Caliguro, 202–219–1596

Directed Research

Title of Study: Young Children's Synthesis and Profile Project

Principal Investigator(s): Jeanne Brooks-Gunn, Center for Young Children and Families, Teachers College, Columbia University, New York, NY 10027, 212-678-3904

Program: Directed Research

Funding Level: $347,000. Year 1 $247,000; Year 2 $100,000

Project Period: 09/39/96–09/29/98

Project Design: This project is in collaboration with the National Institute of Child Health and Human Development (NICHD) and the Office of the Assistant Secretary for Planning and Evaluation (ASPE) in the Department of Health and Human Services. Funds from the Early Childhood Institute are used for costs related to personnel, consultants, printing, and dissemination.

Over the past 25 years, the early childhood field has established a cumulative knowledge base related to young children's development, the important role good health plays in future learning, and how families, early education and child care, and the general community may contribute to school readiness. This knowledge contributes to the mission and overall design of current public and private initiatives for young children. From initiatives such as Healthy Start and Head Start we have learned much about developmental issues, how to evaluate the power of such programs, and how to design and target interventions towards groups of young children and families. However, past and current initiatives never have been studied in terms of their relevance for future programs, nor in terms of implications for future research, practice, and policy.

The Young Children's Synthesis and Profile Project is conducting an indepth study and synthesis of national early childhood initiatives. The project will result in an integration of work and a compilation of lessons learned rather than an encyclopedia of all projects conducted over the past 25 years. All projects to be synthesized will focus on improving child or family well-being. The work includes initiatives designed for children from birth through eight years of age. Specific outcomes of interest for children are being studied and defined in terms of readiness for preschool and school. Readiness includes physical health, cognitive development, social skills, and emotional health. Family well-being is also being examined as an important outcome in and of itself, as well as a contributor to the well-being of children. The initiatives being studied fall into two categories: (1) Major longitudinal studies of children and families, focusing on how America's children grow and become ready for school and beyond; and (2) Major demonstration programs that exist or are beginning.

The Young Children's Synthesis and Profile Project has a Steering Committee comprised of representatives of child and family advocacy organizations, researchers, and program administrators.

This group provides ongoing guidance and recommendations to the project staff. Resulting products will be prepared in a variety of printed and electronic formats, with specific publications designed to: (a) inform families about research findings; (b) provide researchers with information about research designs used in different studies; (c) give policymakers information about policy directions; (d) suggest new directions for private and public early childhood research organizations; and (e) recommend new methods for preparing the early childhood workforce.

Educational Significance of the Study: Through a synthesis of the literature, interviews with key early childhood researchers and policymakers, and an indepth study of current early childhood programs, the field will have new knowledge that will: (a) summarize what has been learned from past national initiatives on the well-being of young children, in terms of physical health, cognitive growth, motivation, social competence, language development, emotional health, and relationships; (b) provide descriptions of what has been learned about family well-being as it relates to the well-being of young children; (c) determine what can be learned from current initiatives, including developing a profile of current initiatives; (d) recommend profitable directions for current initiatives; and (e) recommend future research, practice, professional development, and policy directions based on the knowledge synthesis.

Status of Study and Products: The Steering Committee has met once and ongoing assignments were made. Each member is a resource on specific parts of the study. The projects to be studied have been selected and examples include: Healthy Start, the Comprehensive Child Development Program, the Early Childhood Longitudinal Study, and Early Head Start. Draft chapters have been written and sent out for review. Revisions, based on reviewers' comments, are in process. Drafts of the products will be ready in the summer of 1998.

OERI Contact: Naomi Karp, 202–219–1935

Title of Study: Child-Caretaker Observation System (C-COS)

Principal Investigator(s): Kimberly Boller, Mathematica Policy Research, Inc., P.O. Box 2393, Princeton, NJ 08543–2393, 609–275–2341

Program: Directed Research

Funding Level: $19,997

Project Period: 08/20/97–02/01/98

Project Design: This research is developing a set of materials that will be used to train data collectors working in the Early Head Start National Evaluation projects. The materials include: a training videotape and manual, an instructor's manual, an audiotape, and a reliability test videotape to be used to train data collectors and test their reliability on the Child-Caretaker Observation System (C-COS). There are key behaviors between children and adults that can be used to measure the quality of child-care settings for children from one to five years old. C-COS was designed for the Early Head Start National Evaluation to assess how often those key behaviors take place between the child and the adult. C-COS also includes three overall quality ratings: (1) the C-COS documents which care givers a particular child in a child-care setting is interacting with and captures the frequency, type, and intensity of care giver-child interactions over a 2-hour period; (2) the C-COS measures how often the child talks and to whom, and the frequency of the child's interaction with and attention to others, materials, and television; and (3) the C-COS measures the quality of the child's interactions with other children in care. The training materials and test tape will be made available to other program evaluators.

Educational Significance of the Study: The C-COS coding system will allow researchers to reliably code the quality of interactions that take place between caretakers and children. The C-COS coding system also may be adapted by child-care supervisors who wish to systematically observe and rate how their staff are relating to the children in their care.

Status of Study and Products: The training materials for the C-COS coding system will be completed in January of 1998.

OERI Contact: James Griffin, 202–219–2168

Title of Study: The Relationship Between Early Nonparental Child-Care Quality and Later School Readiness: The Project on Human Development in Chicago Neighborhoods

Principal Investigator(s): Felton Earls, Harvard School of Public Health, Department of Maternal and Child Health, 677 Huntington Avenue, Kresge 310, Boston, MA 02115–6096 617–432–1227

Program: Directed Research

Funding Level: $1,000,000. Year 1 $200,000; Year 2 $200,000; Year 3 $200,000; Year 4 $200,000; Year 5 $200,000

Project Period: 08/15/97–08/14/01

Project Design: The National Institute of Justice (NIJ) and the MacArthur Foundation support a multilevel longitudinal study conducted by the Harvard University School of Public Health. The study examines the interactions of personality, family, and school characteristics on school success and achievement, antisocial behavior, and drug abuse. The study follows 7,200 children in 80 Chicago neighborhoods. The children will be studied in various age groups: one group will be followed beginning at birth, another from age three, and others from age five. The study relates information about the children to information about urban neighborhoods throughout the city of Chicago in an attempt to understand how neighborhood characteristics impact on children's lives.

The National Institute on Early Childhood Development and Education (ECI) is supplementing this larger project in order to examine the relationship between quality of early nonparental child care and later readiness for school. This supplement supports the following additional long-term data collection tasks: information on child-care quality from parent ratings and researcher observation (for the birth, three- and five-year-old age groups); measurements of children's emerging reading abilities (for the birth and three-year-old age groups); and measurements of children's language development (for the birth age group).

Educational Significance of the Study: This community-based sample of children and families from diverse Chicago neighborhoods will provide indepth information on how child, family, and community characteristics affect the relationship between the quality of nonparental care in early childhood and later school readiness and adjustment.

Status of Study and Products: Preparations are now being made to begin gathering information in the Fall of 1998 on the quality of children's nonparental child care and their developmental outcomes.

OERI Contact: James Griffin, 202–219–2168

Title of Study: Educational Profile of Three- to Eight-Year-Old Children of Immigrants: The Health and Adjustment of Immigrant Children and Families Project

Principal Investigator(s): Donald J. Hernandez, National Academy of Sciences, Board of Children, Youth, and Families, National Research Council, Institute of Medicine, 2101 Constitution Avenue, NW, Washington, DC 20418, 202–334–1903

Program: Directed Research

Funding Level: $50,000

Project Period: 07/30/97–09/30/98

Project Design: More than a million foreign-born children came to the United States between 1987 to 1990. Immigrant children and their families tend to receive a patchwork of services, with eligibility dependent upon the conditions under which they entered the United States. The health and development of immigrant children and their families has become an issue of considerable interest to policymakers and practitioners.

The National Academy of Sciences's Committee on the Health and Adjustment of Immigrant Children and Families is currently sponsored by the U.S. Department of Health and Human Services, the Rockefeller Foundation, the Carnegie Corporation of New York, and the W.T. Grant Foundation. This committee will conduct a study that synthesizes data on, and develops a framework for, clarifying what is known about the health, education, and occupational outcomes of various immigrant groups, and the effective delivery of health, mental health, child care, and educational services to these groups.

The National Institute on Early Childhood Development and Education (ECI) has entered into an interagency agreement with the National Institute on Child Health and Human Development (NICHD) to support work on the Health and Adjustment of Immigrant Children and Families Project. This project will synthesize the relevant research literature and support the analysis of existing data sets to add to the available research on young immigrant children and families. It will specifically look at the skills and knowledge of immigrant children and at the implications this knowledge has for public school policies.

The Committee on the Health and Adjustment of Immigrant Children and Families plans to publish an edited volume based on data analyses and a standard National Research Council final report. The ECI will contribute information regarding the early childhood educational and child-care experiences of three- to eight-year-old immigrant children to both of these publications. The ECI will provide a book chapter for the edited volume which examines the child care, preschool participation, and school adjustment of first and second generation immigrant children, ages three through eight, and their families using data from the 1996 National Household Education Survey (NHES).

Educational Significance of the Study: Policymakers and school administrators need information about immigrant children and their families, as growing numbers are entering the public school system. Examples of the types of information which will be included from the 1996 NHES data set for immigrant and nonimmigrant children include: child-care experiences; school experiences and type of school attended by children; educational activities at home; parental involvement in school activities; and demographic characteristics of parents and households.

Status of Study and Products: The NAS Committee plans to release their report in June of 1998, with the edited volume of research to be released in August of 1998.

OERI Contact: James Griffin, 202–219–2168

Title of Study: The Effect of Comprehensive Interventions on Young Children's Learning and Development

Principal Investigator(s): Roxane Kaufmann, National Technical Assistance Center for Children's Mental, Georgetown University Child Development Center,
3307 M Street, NW, Suite #401, Washington, DC 20007–4768
202–687–5000

Program: Directed Research

Funding Level: $600,000. Year 1 $200,000; Year 2 $200,000; Year 3 $200,000

Project Period: 09/17/96–09/30/99

Project Design: Through this interagency agreement, the National Institute on Early Childhood Development and Education is funding a qualitative research study of young children already being served by the Substance Abuse and Mental Health Services Administration (SAMHSA) in the U.S. Department of Health and Human Services. Over the past few years, SAMHSA has funded several demonstration communities to provide intensive, comprehensive health, substance abuse prevention and substance abuse treatment, and mental health services to adults with histories of mental health and substance abuse problems.

At the end of Fiscal Year 1995, SAMHSA awarded grant supplements to eight of these demonstration communities in order to focus the service efforts on adults who have children from birth through seven years of age. The children have been identified as high risk because their families have, or are at risk of having, substance abuse or mental health problems.

In addition to providing actual service interventions to the children and families, SAMHSA funds are used to conduct a cross-site study to determine if the comprehensive interventions are improving the young children's mental health outcomes. The eight sites are located in Birmingham, Alabama; Los Angeles, California; Flint, Michigan; Tucson, Arizona; San Janice, California; Parsons, Kansas; Columbia, South Carolina; and Broadview-Riverview, Illinois. Approximately 500 families and children are served across the 8 sites. Currently, the evaluation plans at the sites do not call for quantitative and qualitative assessments of the children's learning and development as related to school readiness and implications for education and development.

Therefore, the National Institute on Early Childhood Development and Education (ECI) is contributing funds to SAMHSA in order to conduct a quantitative and qualitative study of 180 children served at 3 of these 8 sites. With Institute support, the National Technical Assistance Center for Children's Mental Health at the Georgetown University Child Development Center, and Mathematic Policy Research in Princeton, New Jersey, will determine if and how the intensive mental health, substance abuse prevention, substance abuse treatment, and health interventions affect the young children's learning, development, and school readiness.

The study has convened a Steering Committee comprised of interdisciplinary early childhood researchers, service providers, and parents of young children. The Committee will develop criteria for selecting which of the eight sites will be studied, determine the appropriate measures to use with the sample of young children, identify the types of learning and development outcomes to measure, and serve as ongoing resources to the project. Study findings will be prepared in different formats for a range of audiences, including mental health and substance abuse professionals, families, early educators, and policymakers.

Educational Significance of the Study: As a result of this research, we will have a better understanding of what types of interventions and supports work best to enhance school readiness in young children who are at risk because of their families' substance abuse and mental health problems. We also will have a set of qualitative studies that document and describe how families and young children respond to intensive supports and interventions.

Status of Study and Products: Three sites have been selected to receive site visits: Arizona, Michigan, and Kansas. The visits and data collection begin in January 1998. A study report, describing how the children and families benefited from this integrated service approach, will be released in the Fall of 1999.

OERI Contact: James Griffin, 202–219–2168

Title of Study: National Forum on the Implementation of Neuroscience Research on Early Learning for Educational Practice and Public Policy

Principal Investigator(s): Mildred Winter, Parents as Teachers National Center, Inc.,
10176 Corporate Square Drive, St. Louis, MO 63132,
314–432–4330

Program: Directed Research

Funding Level: $250,000

Project Period: 8/1/97–7/31/98

Project Design: The Parents as Teachers National Center, sponsored a "National Forum on the Implications of Neuroscience Research on Early Learning for Educational Practice and Public Policy." This national forum investigated how current neuroscience research related to language development in children from birth through age three can be used to influence educational practice and public policy.

The goal of the conference was to stimulate an exchange of information and ideas among the 120 invitees, who included researchers, early childhood educators, parents, and policymakers, that could impact educational practice as well as local, state, and federal policies. Case studies of states and communities that are using neuroscience research as a basis for changing policies and thereby improving the quality of early childhood services will be highlighted during the conference.

The Institute's funds paid for the travel, lodging, and honoraria of the four main speakers, who are highly regarded neuroscience and language/literacy researchers; to partially cover travel for eight other researchers from national early childhood professional organizations; and to hire a writer of the conference report, which will recommend future research, practice, and policy directions.

Educational Significance of the Study: The conference will lead to better information on how to use the results of neuroscience research to improve the delivery of language development activities for children from birth through three years of age. In addition, researchers will better understand how neuroscience findings can be applied to policies affecting young children and their families.

Status of Study and Products: The conference was hosted in November 1997. A summary of the proceedings will be available by the summer of 1998.

OERI Contact: Naomi Karp, 202–219–1586

Title of Study: Early Childhood Pedagogy

Principal Investigator(s): M. Susan Burns, National Academy of Sciences,
2101 Constitution Avenue NW (HA 178), Washington, DC 20418,
202–334–2205

Program: Directed Research

Funding Level: $600,000. Year 1 $300,000; Year 2 $300,000

Project Period: 10/1/97–9/30/99

Project Design: The National Research Council (NRC) which serves as the Principal Operating Arm of the National Academy of Sciences, will conduct a study of early childhood pedagogy through the Division on Education, Labor, and Human Performance in the Commission on Behavioral and Social Sciences and Education. This project will examine the research and theory of early childhood pedagogy, which is the study of teaching, across disciplines and countries as it applies to children ages two to five, and will provide the basis for policy decisions based on the state of research related to early childhood education.

The NRC will establish a Work Group of 15 volunteer experts who will meet approximately 6 times over a period of 24 months. The focus of the Work Group will be to:

- review the literature and synthesize research findings that highlight what we actually know about the art of teaching young children;
- highlight the areas where knowledge is uncertain;
- review research concerning special populations; and
- produce a coherent distillation of the knowledge base, and develop its implications for pedagogy, the training of teachers and child-care professionals, and practice in early childhood education programs; and
- draw out major policy implications and future research directions from the findings.

The project staff also will convene at least two public meetings in order to gain insights from a variety of early childhood educators, parents of young children, policymakers, and researchers.

Educational Significance of the Study: The culmination of this project in the year 2000 will be a scholarly report prepared by the Work Group. The report will include an assessment of strengths and weaknesses of the knowledge base in early childhood pedagogy and provide a framework for considering key factors that need to be incorporated into the design of preschool programs. The report will translate what has been learned into products targeted to important user communities; parents, educators, child development professionals, curriculum development specialists, teacher training and child development associates programs, and researchers in various fields related to early childhood education.

Status of Study and Products: The expert panel is being selected.

OERI Contact: Naomi Karp, 202–219–1935
James Griffin, 202–219–2168

Introduction

The National Institute on the Education of At-Risk Students was created in the U.S. Department of Education by the Educational Research, Development, Dissemination and Improvement Act of 1994. The Institute's purpose is to "carry out a coordinated and comprehensive program of research and development" for the improvement of the education of "at-risk students" (Sec. 931(e)(2)). The statute defines an "at-risk student" as one who "because of limited English proficiency, poverty, race, geographic location, or economic disadvantage, faces a greater risk of low educational achievement or reduced academic expectations" (Sec. 912(l)(2)).

The mission of this Institute is to provide national leadership and support to expand research-based knowledge and strategies that promote excellence and equity in the education of children and youth placed at risk of educational failure. The legislation authorizes the Institute to:

- manage grants to operate national research and development centers;
- conduct research directly and through contracts;
- support field-initiated studies;
- provide technical assistance to practitioners;
- create a senior fellows program in the Institute; and
- award dissertation grants and fellowships to support graduate study by minorities.

Researchers supported by the Institute are encouraged to make sure the information they produce will be useful to parents, teachers, and others in making meaningful changes in America's schools.

Center for Research on Education, Diversity & Excellence (CREDE)

Title of Project: Center for Research on Education, Diversity & Excellence (CREDE)—Center Overview

Principal Investigator(s): Dr. Roland G. Tharp, University of California, Santa Cruz, CA

Program: National Educational Research and Development Centers

Funding Level: $20,297,054. Year 1 $3,998,991; Year 2 $4,086,611; Year 3 $4,160,747; Year 4 $4,083,973; Year 5 $3,966,732

Project Period: 7/1/96–6/30/01

Center Mission and Focus: The mission of the Center for Research on Education, Diversity & Excellence (CREDE) is to assist the nation's diverse students at risk of educational failure to achieve academic excellence. Central to its mission, research and development focuses on critical issues in the education of linguistic and cultural minority students and those placed at risk by factors of race, poverty, and geographic location.

CREDE's research plan of research projects provides a comprehensive framework for educational research and development that is strong, flexible, and inclusive of diversity among all individuals and communities. It is based on a sociocultural theoretical framework that is sensitive to diversity of culture and language, and powerful enough to identify the great commonalities that unite people. We address educational excellence from preschool to higher education for students from all major linguistic, cultural, and ethnic groups, including those suffering all four identified risk factors for educational failure: limited English proficiency, poverty/economic disadvantage, race, and geographic location. Accordingly, the projects operate at micro and macro community, school, classroom, and student levels. Individually, the researchers are collecting direct and indirect data via surveys, observations, and analyses of data bases on at-risk students, many of who are also English language learners.

Educational Significance Center Work: This Center addresses one of the fundamental questions facing schools serving linguistically and culturally diverse students, especially those who are at risk of educational failure:

- How can American education be reformed to allow students placed at risk by cultural, linguistic, economic, geographical, or racial diversity to achieve academic excellence?

Accordingly, Center staff are coordinating 30 research projects, each headed by experienced Principal Investigators, all of whom are accountable to the CREDE Director.

OERI Contact: Gilbert N. Garcia, 202–219–2144

Title of Study: Language Learning and Academic Achievement (CREDE Program 1)

Principal Investigator(s): Donna Christian, Center for Applied Linguistics (CAL), Washington, DC; and Fred Genesee, University of California-Davis, Davis, CA

Program: National Educational Research and Development Centers: Center for Research on Education, Diversity, and Excellence (CREDE)

Funding Level: $3,924,801. Year 1 $740,998; Year 2 $769,703; Year 3 $798,265; Year 4 $847,371; Year 5 $768,464

Project Period: 7/1/96–6/30/01

Project Design: Researchers and educators alike agree that a major goal of educational programs for limited-English proficient (LEP) students is full integration in English-medium classes where they work with other students toward the same high level standards. There is general agreement that effective education for LEP students, as for all students, must build on the cognitive, linguistic, and social skills they bring to school. Thus, the challenge for educators is to create learning environments that build on the strengths of LEP learners, accommodate their learning needs, and ultimately facilitate their integration into mainstream curricula and schools.

Language and culture are critical elements in such programs—both as existing resources to be developed and as bases for extending LEP students' repertoire of skills and knowledge. Drawing on research-based knowledge and professional experience, educators have devised a number of programmatic alternatives to respond to language and culture differences in school populations for specific local conditions. While individual program evaluations abound, and several large-scale studies have attempted to compare program types, we must turn to other forms of investigations to move forward. If there is no single "best program" to educate LEP students, we must investigate current practices in more depth in terms of the populations they serve and the ways they facilitate the transition and integration of those populations into the full range of curricular options available to students from English-speaking backgrounds.

Research in the Language Learning and Academic Achievement Program will fill this gap in our knowledge base by looking closely at several important, and quite different, programmatic approaches. Accordingly, the Program supports six studies nationally. The projects are carrying out indepth investigations of a number of approaches aimed to respond effectively to English language learners' needs: two-way immersion, sheltered instruction, newcomer, and transitional and developmental bilingual programs. These program studies:

- Examine the effectiveness of a number of distinct educational programs designed to meet the needs of LEP students at both elementary and secondary levels;
- Describe program features and instructional strategies that facilitate the acquisition of English for academic purposes; and
- Identify the professional development needs of educators working within these approaches.

Educational Significance of the Studies: Thomas & Collier's large scale national study (project 1.1) provides an over arching profile of LEP student performance (including data on language and academic achievement) and of significant program, student, and instructional variables that affect their achievement in different programs across the country. It provides a frame for the other studies that focus on selected student groups, program models, and sites—indepth investigations of four alternative models for educating LEP students, including two-way immersion (project 1.2), sheltered content instruction (project 1.3), newcomer programs (project 1.4), and transitional bilingual programs (project 1.5). Common questions addressed in each study concern the relative levels of language and academic achievement of LEP students, instructional and programmatic features that facilitate LEP students' transition to English-medium classes, and the professional development needs of school. Together, the proposed studies seek to deepen our understanding of successful programs and practices and to provide guidance to educators with respect to best policies and practices for meeting the educational needs of LEP students.

Collectively, the Language Learning and Academic Achievement Program provides a comprehensive focus on pedagogy, teacher development, systemic school wide and district wide reforms. This approach provides comprehensive data at different school, classroom and student levels. The results of the projects will extend our knowledge and understanding of the effectiveness of alternative educational programs (and specific programmatic features and instructional strategies within programs) for LEP students and, in addition, contribute to recommendations concerning policy, professional development, and effective practice for these students.

OERI Contact: Gilbert N. Garcia, 202–219–2144

Title of Study: A National Study of School Effectiveness for Language-Minority Students' Long-Term Academic Achievement (Project 1.1)

Principal Investigator(s): Ginger Collier and Wayne P. Thomas, George Mason University, Fairfax, VA

Program: CREDE Program 1: Language Learning and Academic Achievement

Funding Level: $1,123,314. Year 1 $204,154; Year 2 $213,860; Year 3 $224,096; Year 4 $234,901; and Year 5 $246,303

Project Period: 7/1/96–6/30/01

Project Design: An important principle of the research design of this project is that the researchers are examining the services currently provided to English language learners by school systems in the United States, without imposing any changes on school practices. After results of the data analyses are presented to the school staff, the school district may choose to implement reforms based on the findings. The researchers are asking the following questions:

- What are the characteristics of language minority (LM) students in terms of their primary language, country of origin, Native Language and English proficiency, prior academic performance, school attendance, degree of student retention in grade, socioeconomic status, and other student background variables?

- How much time is required for LM students to become academically successful—as measured by standardized instruments used by the Local Education Agency (LEA) —after participating in the various types of bilingual education or special English-as-a-second language ESL programs, characterized as stable, well-established, and well-operated?

- What are the most important student, program, and instructional variables that affect the school achievement of LM students?

The researchers are collecting already existing longitudinal data on large number of student cohorts—students in kindergarten (K) through grade 12 in 26 school districts in 14 states. The study site schools were chosen in part if they had collected critical limited-English-proficient (LEP) and participating non-LEP student information for at least the last 5 years and could provide evidence that they had implemented a variety of education services to meet these students needs. Subjects in the study include U.S. born and immigrant students and represent over 100 different language groups, as well as American Indian students.

Diverse but important information has been and is being collected from each participating school system, including records from testing offices, centralized student information systems, language-minority (LM) central registration centers, and surveys of teachers, students, and parents conducted by participating school systems. In addition to the five or more years of data already collected by the school, school staff are interviewed to collect information on the sociocultural context of schooling within each instructional setting. The researchers use data capture software and relational database computer programs to restructure these data into one or more comprehensive student databases for each school system.

Analyses include descriptive summaries for each variable (e.g., student characteristics, time in program), as well as exploratory data plots and graphical analyses. Analyses for each individual school district are provided as internal reports to each school district. The national research reports from these analyses will focus on analysis of general patterns in the data that are generalizable across several school district sites.

Educational Significance the Study: Among the special features of this study is the collection of longitudinal data from a large number of student cohorts representing a broad cross-section of programs, schools, and grade levels to address the problem of student attrition across time. This allows for both a snapshot and a time-series examination of the degree to which LM students do (or do not) reach long-term parity with their native-English speaking peers in school-based achievement instruments, administered in English.

Another important feature is its focus on the long term picture. The large majority of program evaluation studies in LM education to date focus on the short term, examining students for a 1–3 year time frame. The short-term studies typically show that students being schooled through two languages do as well or slightly less well (in the first 1–2 years) on tests in English as those being schooled exclusively in English, their second language. But in the long-term studies that examine students' performance over a 4–12 year period, bilingually schooled students catch up to their monolingually schooled peers by year 4 or 5; and at the same time, those schooled only in English begin to lose ground and do less and less well as they move on through school. In contrast, those schooled bilingually typically outperform their peer group after 3 to 4 years of schooling in the United States. This study will provide additional data for the "long-term" picture.

Status of Study and Products: The researchers have begun to receive the first batches of data from school districts, begin the data structuring process for the data, and continue the dialogue on data collection with other school districts. The researchers also have conducted training sessions on the results of their findings from Phase One of the study with two of the original school district sites and have set in motion a plan for change in programs that will lead to new data on new program implementation from those school systems—a continuous collaborative research and school reform process.

No findings are yet available from this study, but the researchers have completed a national research report of the findings from the first phase of the study (conducted 1991–96) on which the new analyses will be based. This report is being published by an OERI national clearinghouse: Thomas, W.P., & Collier, V.P. (1997). *School effectiveness for language minority students*. Washington, DC: National Clearinghouse for Bilingual Education.

OERI Contact: Gilbert N. Garcia, 202–219–2144

Title of Study: Two-Way Immersion (Project 1.2)

Principal Investigator(s): Donna Christian, Center for Applied Linguistics, Washington, DC; and Fred Genesee, University of California-Davis, Davis, CA

Program: CREDE Program 1: Language Learning and Academic Achievement

Funding Level: $1,175,036. Year 1 $224,777; Year 2 $224,976; Year 3 $226,29; Year 4 $249,549; Year 5 $249,441

Project Period: 7/1/96–6/30/01

Project Design: This project is addressing four fundamental questions regarding the efficacy of two-way immersion, an alternative program for limited-English proficient students:

- What levels of English language proficiency do LEP students achieve in two-way immersion programs and how do these levels relate to features of program and practice?
- How effective is two-way immersion for at-risk students (including low income, LEP, and racial/ethnic minorities)?
- How do LEP students from elementary level two-way immersion programs progress and perform in academic and language domains at the secondary level?
- What professional skills and knowledge are required for two-way immersion teachers to create effective learning environments?

The first component of this study, on English language development and academics, employs a combined qualitative/quantitative approach to examine the English language development of language-minority students, the academic achievement of at-risk students, and features of effective classroom environments, all within the context of two-way immersion programs. These topics are being investigated through a 3-year longitudinal study of 600 two-way immersion students in 12 programs as they progress through grades 3, 4, and 5. The researchers are looking at students' development in reading, writing, oral proficiency, and academic achievement in both English and Spanish over the 3-year time span.

In order to do this, the researchers are collecting repeated measures, such as writing samples, reading assessments, standardized achievement tests, and oral proficiency assessments, all in both English and Spanish. As the data are collected, the researchers use hierarchical linear modeling to develop growth trajectories that describe the progress of individual students, and to identify characteristics of individuals and classrooms that affect those growth trajectories. The researchers also compare the standardized English achievement test performance of students enrolled in two-way immersion programs to that of similar students in alternative programs within the same districts. In addition, the researchers rely on field notes from classroom observations to provide contextual information about teacher/student interactions, teacher and student language use, student participation patterns, students' writing processes, and other classrooms features.

The second component of this study examines high school performance of two-way immersion graduates. The achievement, career path, and attitudes of former English-only and LEP students who were enrolled in a two-way immersion program at the elementary school level are being studied. Questionnaires, interviews, and other methods are being used to understand whether and to what extent the two-way program influenced these students' outcomes at the high school level.

A combined quantitative/qualitative approach is being used for a study component in which researchers are conducting a needs assessment of professional development. Researchers conducted semi-structured interviews with eight teachers, the interviews are currently being coded and analyzed, and the data will be used to generate a Likert-type measure that will be distributed to all teachers in the 12 two-way programs involved in this study. The results of the Likert-type measure will be analyzed descriptively, and combined with the information generated from the qualitative interviews.

For a component studying alternative professional development, an entirely qualitative approach is being used to document the experiences of teachers who choose to participate in action research projects and teacher study groups. Reflective journals and semistructured interviews with participating teachers form the data core of this project. The expected results are that teachers who engage in action research projects improve their understanding of the principles of teaching and learning and thus help students improve their achievement. Further, such projects are expected to lead to the formation of teachers communities of learners, another school improvement strategy that the researchers are investigating.

A qualitative approach also is being used to learn more about two-way immersion programs that have extended to the secondary level through ongoing data collection. Phone interviews are being conducted with secondary two-way programs during year 2 of the study, and case studies of three secondary programs will be developed during year 3. In addition, information about new two-way programs is continually being collected and updated for a Directory of Two-Way Bilingual Programs. This information is gathered through questionnaires that are mailed to new programs. The purpose of the case studies is to generate retrospective insights form school staff about the program components that made a difference in student achievement and a difference in managing teaching approaches.

Educational Significance the Study: Immersion programs are one of the fastest growing programs in U.S. schools because they offer teaching and learning opportunities for all students, including limited English proficient students. The importance of this study is that it represents the first attempt by researchers to follow over a large cohort of students in two-way Spanish and English immersion programs over time. The 3-year longitudinal study will enable researchers to determine how well LEP students are learning English. The study will also enable the researchers to examine the achievement, career paths and attitudes of both native English speakers and LEP high school students who were enrolled in two-way immersion programs at the elementary school level.

Finally, the study is of national significance because increased awareness of the key features of these programs, their effectiveness in helping students achieve to their optimum potential, and their management demands will help school districts consider the implementation of programs with similar goals for all students.

Status of Study and Products: A list serve was established in April 1997 to facilitate communication among teachers, and to allow them to share concerns, questions, and helpful practices with each other. Further, the Directory of Two-Way Bilingual Programs in the United States was converted to electronic format and posted on the Center for Applied Linguistics (CAL) Web site. The 1997 Supplement to the Directory has been completed, and has been included in the electronic version of the Directory. Three hundred copies of the Supplement were produced, and complimentary copies were mailed to all 204 programs that are profiled in the Directory, as well as selected organizations that have received the Directory in the past.

OERI Contact: Gilbert N. Garcia, 202–219–2144

Title of Study: The Effects of Sheltered Instruction on the Achievement of Limited-English Proficient Students (Project 1.3)

Principal Investigator(s): Jan Echevarria, California State University, Long Beach, CA; and Deborah Short, Center for Applied Linguistics, Washington, DC

Program: CREDE Program 1: Language Learning and Academic Achievement

Funding Level: $786,052. Year 1 $144,223; Year 2; Year 3 $143,906; Year 4 $146,545; Year 5 $152,955

Project Period: 7/1/96–6/30/01

Project Design: The researchers are working with middle school social studies, math, science, and language arts teachers to answer questions about the best way to conduct high quality sheltered English lessons for limited-English-proficient (LEP) students. Along with the teachers, the researchers have developed a model of effective sheltered instruction. This project is addressing four fundamental questions regarding the efficacy and effectiveness of this alternative approach to the education of LEP students:

- What are the characteristics of sheltered instruction, and how does it differ from high-quality nonsheltered instruction?
- Does a trainer-of-trainer approach assist teachers in acquiring skills for conducting high quality sheltered lessons?
- Does sheltered instruction improve the achievement of LEP students in content areas such as social studies?
- After 1 year, is there a significant difference in reading scores, as measured by the California Test of Basic Skills (CTBS), and growth in English language skills for students in a sheltered program versus students in a traditional ESL program?

The researchers are evaluating the model in 8 classrooms in states located on the eastern U.S. coast (in Maryland, Virginia and DC) and 11 classrooms in states located on the west coast (in California). During a 3-day summer professional development institute the researchers familiarized the teachers with the project goals and the observation instrument, and trained them on implementation of the project's model of sheltered instruction. During the school year, the researchers observed classroom instruction and videotaped participating teachers' classes approximately three times. The teachers meet at least three times throughout the year with project researchers and twice each year in reunion workshops with other project teachers to discuss topics related to the research agenda, refine the sheltered instruction model, review and discuss videotaped lessons, and provide constructive feedback to help improve instruction.

The professional development of teachers is being measured through the Sheltered Instruction Observation Protocol (SIOP), developed and modified by researchers and project teachers, which measures the teachers' use of the instructional practices advocated by the model. Observed and videotaped classroom instruction is being analyzed using the SIOP. Researchers share these analy ses with teachers on an ongoing basis as a means of facilitating teacher growth and validating the research interpretations. The SIOP data collected throughout the project will be analyzed to determine overall teacher change and significant development in specific areas of instructional practice.

The researchers also are collecting and analyzing student data in an attempt to determine whether students receiving high-quality sheltered instruction differ significantly from their peers in nonsheltered or lower-quality sheltered instruction in their content and language achievement.

Control groups of students are selected and matched, to the extent possible, for LEP, poverty, and economic disadvantage factors. The student data is a mix of quantitative and qualitative indicators of the students' language and content achievement and growth over time. Most of the quantitative student data is being collected from in-place assessments. The data collected include students' reading scores as measured by standardized tests (where available) and/or program-based progress and exit tests (depending on the district's testing policy). Baseline scores (prior to being exposed to the quality sheltered instruction) was collected for all students from their spring, or year-end, testing of the 1996–97 school year. The researchers are collecting data for the same students at the end of the following 2 years and also are collecting report card grades in the same manner.

Additional data include student writing from the fall and spring of each year, which is scored using a rubric scale. Also to be analyzed are the writing for indicators (e.g., organization, style, development of content theme, mechanics) of the presence or absence of noteworthy development in productive skills. Student interviews offer qualitative data providing the students' perspective of what teachers do to make content and language more comprehensible for them. In addition, the researchers are collecting student work samples and conducting several in-class observations to monitor how students' level of participation changes over time and will analyze the student interviews, work samples and observations for similarities and differences between experimental and control groups.

Educational Significance of the Study: Preliminary data indicate that the sheltered instruction model is effective for teacher lesson planning and professional development. The SIOP protocol being used for recording classroom interactions is a valuable tool for quantifying and assessing the level of implementation of the model.

Status of Study and Products: In year 2 the researchers will present a report explaining how to use the observation instrument (SIOP). All project work is proceeding on schedule.

OERI Contact: Gilbert N. Garcia, 202–219–2144

Title of Study: Newcomers: Language and Academic Programs for Recent Immigrants (Project 1.4)

Principal Investigator(s): Deborah Short, Center for Applied Linguistics, Washington, DC

Program: CREDE Program 1: Language Learning and Academic Achievement

Funding Level: $294,460. Year 1 $69,431; Year 2 $70,059; Year 3 $73,568;
Year 4 $81,402

Project Period: 7/1/96–6/30/00

Project Design: Newcomer programs serve students who arrive from other countries and are eligible to enroll in U.S. schools. The goal of this project is describe the key components of existing Newcomer programs and their impact on student achievement. The project is addressing four fundamental questions:

- What models of secondary newcomer programs are currently in practice? What are their goals? What distinguishes them from traditional bilingual and ESL programs at their home schools?

- What are the characteristics of the programs' activity settings, and what background sociocultural features determine and support them—such as reasons for establishment; student populations; length of program; grade levels; location; identification, placement, and assessment of students; curriculum; exit criteria; activity settings; teacher background and training; school governance; funding sources; and comprehensive services (e.g., social and health services)?

- Through what activity settings do schools integrate the newcomer students with other students? What transition practices facilitate the students' exit from the newcomer program, and how do schools monitor newcomer students once they have entered the home schools?

- How do newcomer programs compare with traditional programs (bilingual or ESL) in the students' home schools, in terms of attendance and dropout rates, English language growth, content area growth, attitudes towards school, and postsecondary options?

A database illustrating the current status of secondary newcomer programs in the United States is being complied under this project. Data are being collected via the use of questionnaires and telephone surveys, accompanied by program literature (e.g., goal statements), evaluation information, and communications with parents. The program variables being investigated include program type and location, program length, staffing practices and teacher preparation, student educational background, curriculum design, courses offered, type of language support offered, placement and assessment procedures, exit criteria, instructional practices, school governance, auxiliary services, and funding sources.

By June 1997, over 115 programs had been surveyed. Based on the responses and follow up, project staff determined which of these programs met the criteria for inclusion in the database. Some programs were not eligible; others indicated they would not be able to participate in the survey process at that time; and a few no longer had programs in operation. The researchers identified 60 programs (located at 70 schools plus 2 district intake centers) in 18 states as secondary newcomer programs. Most of the programs are designed as a program within a regular school, but 12 programs are at a separate location. Three of these are full-length high schools where students generally enter in the ninth grade and remain in the program until graduation. Two sites are located at district intake centers which offer short-term courses before the students enter one of the regular schools in the district. In years 2–4, the researchers plan to update the database as additional programs are identified and new information is collected.

Over the course of 4 years, the project will describe the newcomer program designs and their implementation at selected case-study sites. In years 1 and 2, research project staff visited programs representing different newcomer models, observed classes and interviewed students, teachers, administrators, parents, and community members. Distinguishing program characteristics and goals are being identified and challenges and successes of the programs documented. Case study sites have been and are being selected, with a focus on the integration of newcomer students into the district population and on the transition process where students exit newcomer programs and enter other language support or mainstream programs, usually in their home schools. For comparison purposes, the researchers match students or classes in newcomer and other district programs, and gather achievement data for current and former students to gauge their academic progress, as well as how well they have adapted to their new school settings. The information collected by the researchers will be used to evaluate the effectiveness of newcomer programs.

Drawing from year 1 data, the researchers are identifying two to three newcomer programs with successful track records for transitioning students into regular school programs. To document the possible reasons for student failure in making this transition, the researchers also include one or two programs with less successful transition histories. In both cases, the researchers monitor students who have made transitions to their home school or mainstream program to follow their English language development and academic achievement for up to 2 years.

Educational Significance of the Study: Newcomer programs serve a critical need for students who arrive from other countries and are eligible to enroll in U.S. schools. Clearly, these programs help many students adjust to their new surroundings. Newcomer programs, for example, pay much attention to familiarizing students to their new schools, the school's educational expectations, the community, and the United States. Eighty-eight percent of the programs provide instruction in cross-cultural/orientation to the United States. Forty-three percent also offer classes to orient parents to the United States.

The rationale for establishing these programs varies across the sites but many programs refer to one or more of the following key issues: students were at risk for educational failure or drop out; students were over age for their grade one level placement due to weak academic skills and limited formal education; the needs of these students surpassed the instructional design of the regular ESL or bilingual program that was in place in the district; and the students had no to low English or native language literacy skills.

Status of Study and Products: The study has already produced substantial findings:

- Newcomer programs vary in their definitions of newcomers, but most include recent arrival to the United States or the school district and/or limited English proficiency as major characteristics of the student population. Half of the programs also mention students are below grade level or have limited formal education. Some programs restrict enrollment further to students who have been in the U.S. for 1 year or less.

- In terms of students, the number served by the newcomer programs ranges from 14 to over 740. Almost half of the programs serve 50 or more students, and 12 of these serve 200 or more students. The age range of the students is 10 to 22 years. Newcomer programs are also diverse in the language backgrounds of the students. While just over half of the programs enroll students from four or more different native language backgrounds, almost one-third serve students that share one native language. In one-third of the sites, 10 or more different native language backgrounds are represented among the students. Most of the newcomer students speak Spanish.

- The programs offer a range of instructional activities for the students that reflect goals of developing both language and academic skills. Ninety-eight percent of the programs provide a course in ESL. Eighty percent of the programs offer sheltered content instruction and 73 percent offer content instruction in at least one of the native languages of the students. More than one-half of the programs offer both sheltered and native language content instruction. Forty percent have courses in native language literacy for the students. All of the programs assess the students, but the measures employed vary, including commercially available tests, district and teacher developed tests, student portfolios, and committee reviews.

Using the survey responses, the researchers have created a computerized newcomer database. The complete database is available both electronically and in print. CREDE is now distributing the *Secondary Newcomer Programs in the United States: 1996–97 Directory*—it is available from CAL/CREDE at the Center for Applied Linguistics, 1118 22nd Street NW, Washington, DC 20037–1214. All project work is proceeding on schedule.

OERI Contact: Gilbert N. Garcia, 202–219–2144

Title of Study: Upscaling for Transition: Instructional and School Wide Factors to Support Latino Students' Transition from Spanish to English (Project 1.5)

Principal Investigator(s): Claude Goldenberg and William Saunders, California State University, Long Beach, CA

Program: CREDE Program 1: Language Learning and Academic Achievement

Funding Level: $545,939. Year 1 $98,413; Year 2 $102,375; Year 3 $110,412; Year 4 $114,974; Year 5 $119,765

Project Period: 7/1/96–6/30/00

Project Design: The researchers are using a combination of designs—case study, experimental, participant observation, and survey—to try and answer two questions simultaneously:

- What are the independent effects on student achievement of different components of a successful transition (Native Language and English proficiency) program, as evidenced by teacher perceptions and student outcome measures administered by the school and as part of this project?
- Does the school change model being used help a school implement a successful transition program school wide?

The two elementary schools in Los Angeles that are participating in the project have a combined enrollment of more than 2,200 students, two-thirds of whom are English language learners, mostly of Spanish origin. The project is addressing two fundamental questions about key transitions limited-English-proficient (LEP) students are making across time in class:

- What features of transition programs are most effective and important?
- What implementation processes assist schools in adopting and using key features of transition programs?

Through classroom observation and teacher assessments, the project is gauging the effects of two program components: instructional conversations (IC), and literature logs (LL). ICs and LLs are being evaluated both independently and in combination to determine the contributions of these activities to students' reading comprehension. The project researchers believe that ICs and LLs will help students to understand a story's theme and that, when the two are used together, there will be an even stronger effect. Accordingly, the goal of this project is to establish whether and to what extent this is so. Results so far have varied between limited- and fluent-English-proficient students.

Educational Significance of the Study: When LM children make the transition to English mainstream instruction, they are especially vulnerable to academic underachievement. Teachers should expect that these students need a comprehensive education program that includes a wide range of instructional strategies and learning opportunities—from explicit skills instruction to reading, discussing, and appreciating literature to help them make successful transitions.

Teachers see transition instruction as requiring a wide range of components, from skill-building to the study of literature. They see studying literature as particularly important for facilitating English competence. In terms of the project's component building efforts, these findings confirm the hypothesized combined effect of ICs and LLs. Findings also provide further evidence of the value of such strategies for English learners. Teachers need to know that the instructional activities on which they spend time have measurable and meaningful effects on important student outcomes. This study provides such evidence. These findings should be useful to all teachers with English language learners making a transition to English instruction.

This study has already demonstrated that ICs and LLs contribute to student comprehension and identification of a story's theme. They represent "value added" for time spent (teacher time in preparation and student and teacher time in instruction). Additional project work will further substantiate the preliminary findings and help the researchers to craft key guides for teachers to improve teaching and learning.

Status of Study and Products: The Semi-Annual Progress report indicates that, because of changes in school administrations, the researchers had to change school sites. The researchers are now working in two comparable schools in the Los Angeles School District. These schools are somewhat more diverse (language, ethnicity) than the schools in the initial project sample. Both are high-poverty schools with large numbers (approximately 65 percent) of English language learners.

A major deliverable, *The Effects of Instructional Conversations and Literature Logs on Limited and Fluent English Proficient Students' Story Comprehension,*" has been submitted and is scheduled to be produced in the series of Center Research Reports. All project activities are on schedule and there is every indication that this project is making good progress.

OERI Contact: Gilbert N. Garcia, 202–219–2144

Title of Study: Professional Development (CREDE Program 2)

Principal Investigator(s): Leonard Baca, BUENO Center, University of Colorado, Boulder, CO; and Robert Rueda, University of Southern California, Los Angeles, CA

Program: National Educational Research and Development Centers: Center for Research on Education, Diversity, and Excellence (CREDE)

Funding Level: $1,654,021. Year 1 $258,558; Year 2 $364,657; Year 3 $430,981; Year 4 $307,556; Year 5 $292,271

Project Period: 07/1/96–06/30/01

Project Design: The Professional Development Program is a network of projects studying teachers of bilingual, culturally diverse students placed at risk—their characteristics, careers, preservice education, and inservice professional development. All sociocultural planes are represented in this program: the personal, the interpersonal, and the community.

The National Study of Effective Preservice Teacher Education for Diverse Student Populations is examining a sample of 352 bilingual teacher education programs' structure, curriculum content, and process, focusing on how programs increase teachers' capacity to effectively teach linguistically and culturally diverse students. Research on teacher development through inservice models is represented by the project on Professional Development for Chinese Bilingual and Special Education Teachers. This is an intervention study in reading comprehension instruction for diverse students placed at risk, for which teacher skills are developed through joint activity between teachers and researchers.

A radically innovative university-based preservice teacher education program is being examined in a study under the project Latino Paraprofessionals as Teachers: Building on Funds of Knowledge to Improve Instruction. Situated within a university program of teacher preparation, it examines the possibilities for matching teachers' and students' "funds of knowledge."

Project 2.4, on the professional development of school leaders, is focused on principals who are striving to improve their performance in fostering positive race and ethnic attitudes and diverse students' achievement. The study, Leading for Diversity, aims to create a case-based curriculum in an administrative credentialing program.

Educational Significance of the Study: Effective professional development practices for teachers, paraprofessionals, and principals are being explored to assist the nation's diverse at-risk student population to achieve academic excellence. The studies represent a comprehensive view of professional development, closely tied to actual practice, which allows the researchers to make conclusive statements about the major issues in the field—from the characteristics of teachers, through the processes of development—to the policies that will enable reform.

OERI Contact: Beverly Coleman, 202–219–2280

Title of Study: National Study of Effective Teacher Education for Diverse Student Populations (Project 2.1)

Principal Investigator(s): Leonard Baca, BUENO Center, University of Colorado, Boulder, CO; and Priscilla Walton, University of California, Santa Cruz, CA

Program: CREDE Program 2: Professional Development

Funding Level: $956,811. Year 1 $158,558; Year 2 $184,437; Year 3 $201,990; Year 4 $208,007; Year 5 $203,821

Project Period: 07/1/96–06/30/01

Project Design: The problem for systemic education reform lies in educating teachers to translate rigorous standards, enhanced curriculum, and innovative pedagogy into teaching and learning for all their students. Teacher education that prepares teachers for diversity is challenged to also assure teachers' competency in bilingual, multilingual, and multicultural classrooms. This study is a national investigation of bachelor's degree teacher education programs which prepare teachers for the linguistic and cultural diversity of U.S. classrooms. Additionally, this study identifies and reviews post-baccalaureate teacher education programs to discover how they build teachers' competency and willingness to provide educational environments necessary for diverse students' success. The research questions are:

- What views of language, culture, teaching, and learning currently guide programs that prepare teachers to teach diverse students?
- What criteria identify successful programs, according to the professional standards of the National Association of Bilingual Education (NABE), Teachers of English to Speakers of Other Languages (TESOL), and National Council of Accreditation of Teacher Education (NCATE)? Are these professional standards consistent with contemporary views and research on native language instruction, second language acquisition, cultural considerations, learning, and teaching?
- What are the goals and outcomes of successful teacher preparation programs? What are their commonalities? What makes them unique?
- What are the exemplary features of successful programs nationally, and how are these disseminated?
- To what degree do programs, nationally, conform to professional standards set forth by NABE, TESOL, and NCATE?
- What are the implications for the professional development of teacher education faculty involved in delivering these programs?

Researchers are conducting a National Teacher Education Study Survey, followed by case studies in selected state sites. The teacher education programs to be surveyed were identified through: OBEMLA-sponsored Teacher Development Institutes; U.S. Department of Education-sponsored

OBEMLA-sponsored Teacher Development Institutes; U.S. Department of Education-sponsored Eisenhower Federal Activities Program of Professional Development; State Education Agencies; and other professional recommendations. A survey instrument designed to obtain information about program goals, structure, curriculum, and pedagogy has been developed, piloted and mailed out to approximately 600 programs across the country.

Responses to the survey were used to develop the Bilingual Teacher Education Study, in which successful programs and their change process are being documented through case studies. Site visitations, structured by observation and interview protocols, are being conducted in Colorado, New Mexico, Texas, Utah, northern California, southern California, Florida, and New York at sites chosen through a stratified purposeful sample. The case studies describe programs' structure, curriculum, goals, social processes, and the perspectives underlying them. Particular attention is being paid to program features that emphasize diversity awareness and sensitization to language and cultural issues. Information about the process of change in education faculty and their programs will be used to answer questions that affect standards, certification requirements, and program design.

Educational Significance of the Study: The survey and case study data will provide information about the relation of current teacher education programs to the current knowledge base about effective education for diverse students, and to NCATE, NABE, and TESOL standards for professional teacher education program development. A national directory of programs is being compiled from the data base.

Status of Study and Products: The ongoing review of the literature produced annotated bibliographies in the areas of teacher education standards, language acquisition, and multicultural education. Training material development activities produced two teacher education module prototypes in language acquisition and multicultural education which have undergone initial field testing. Dissemination activities included an American Educational Research Association (AERA) presentation and a training of teacher trainers institute. The annual performance report indicates that progress is on schedule with no significant problems encountered. Annotated bibliographies are available online at CREDE's Web site (*www.crede.ucse.edu*). A definitive report will be issued at the end of the study.

OERI Contact: Beverly Coleman, 202–219–2280

Title of Study: Expanding Knowledge Base on Teacher Learning and Collaboration: A Focus on Inner-City Chinese American Limited-English Proficient Students (Project 2.2)

Principal Investigator(s): Ji-Mei Chang, San Jose State University, CA

Program: CREDE Program 2: Professional Development

Funding Level: $137,610. Year 1 $49,611; Year 2 $49,549; Year 3 $38,450

Project Period: 07/1/98–06/30/01

Project Design: This project emphasizes the training needs of special education teachers and supports professional development of bilingual education teachers and special education resource specialists. In this study, bilingual education teachers and learning disabled (LD) resource specialists are forging partnerships with parents, and building a teacher-specialist-parent collaborative intervention model to enhance English reading comprehension within an inclusive environment. The study attempts to answer the following questions:

- What are the effects of such collaborative intervention on student outcomes?
- What are the collaboration processes and contexts that foster students' dual language and literacy development?
- What are the mediation processes and contexts that forge partnerships with limited-English proficient parents?
- What are parents' view of their own knowledge about reading comprehension strategies, ability to participate in their child's learning, and ability to maintain a partnership with the teacher and specialist to support their child's learning?

The project is being conducted in schools located in the Chinatown community of San Francisco and the sample will include 48 4th- and 5th-grade LEP and LD students. Teacher-researcher teams provide peer coaching activities to institutionalize this professional development program in the school district and engage in classroom-based collaborative action research. They will monitor parent involvement and student's progress in reading comprehension.

Educational Significance of the Study: Inner-city Chinese American students who are identified as LEP and LD or who are placed at risk of academic failure have not received adequate services in schools. This study addresses a number of factors which have influence, eventually resulting in fragmented service delivery models and missed learning opportunities for these students.

Status of Study and Products: This study will begin in year 3 of the cooperative agreement.

OERI Contact: Beverly Coleman, 202–219–2280

Title of Study: Latino Paraeducators As Teachers: Building on Funds of Knowledge to Improve Instruction (Project 2.3)

Principal Investigator(s): Robert Rueda, Michael Genzuk, Ray Baca, and Guilbert Hentschke, University of Southern California, Los Angeles, CA

Program: CREDE Program 2: Professional Development

Funding Level: $159,600. Year 1 $80,220; Year 2 $79,380

Project Period: 07/1/97–06/30/99

Project Design: This 2-year project investigates both the belief systems and the existing "funds of knowledge" (i.e., knowledge of the language, social and discourse norms, and other cultural and linguistic resources of students and their communities) of bilingual Latino paraeducators (teacher aides) in classroom settings. A major focus is on how these factors impact classroom instruction for low socioeconomic status (SES) English learners in reading and language arts instruction. The research questions are:

- How do the "folk theories" and beliefs of paraeducators and their partner teachers compare in domains critical to the education of English learners such as the nature of learning, literacy, language acquisition?
- Do Latino paraeducators have existing funds of knowledge (i.e., an already established knowledge of the language, social norms, and other cultural and linguistic resources in the communities they work in) which can serve as special resources to low SES English learners in urban schools?
- Is the use of these funds of knowledge in the instructional interactions and activity settings they create for their students impacted by professional development (i.e., formal training in the process of receiving a teaching credential)?

Participants in the study include 30 Latino bilingual paraeducators, divided into 3 groups: a group not currently in a degree program; a group currently enrolled in a special mentor-based program at the Latino Teacher Project at the University of Southern California, a paraeducator credential program; and a group who have successfully completed the program and have been out of school for 2–3 years.

The study examines and catalogs the funds of knowledge (for example, knowledge of the community, discourse knowledge, sociocultural and interactional norms) of Latino paraeducators. Such knowledge is being assessed using a multimethod approach, including informal interviews, semistructured belief interviews, an acculturation measure, and a funds of knowledge interview. The role of the participants' funds of knowledge play is captured in instructional activities, with a special focus on reading and literacy. Ongoing field notes are collected describing the range and nature of instructional activity settings in each classroom examined. A descriptive "baseline" is established in each classroom, then more focused data is collected on instructional activity settings of interest.

Investigators are using the Activity Setting Observation System (ASOS) to collect more structured data on specific small group teaching interactions focused on reading and/or literacy. Additionally, plans are to collect simulated recall interviews while participants view tapes of their lessons.

Educational Significance of the Study: It is expected that this project will contribute to the design of effective learning environments for low SES English learners as well as to the design of professional development programs and practices for this neglected group of educational practitioners.

Status of Study and Products: The annual performance report indicates that progress is on schedule with no significant problems encountered. An initial inventory of data collection measures has been compiled and the first year products are due in June 1998.

OERI Contact: Beverly Coleman, 202–219–2280

Title of Study: Leading for Diversity: Professional Development for School Leaders (Project 2.4)

Principal Investigator(s): Sau-Lim Tsang, Rosemary Henze, Anne Katz, and Edmundo Norte, ARC Associates, CA; and A. Reynaldo Contreras, San Francisco State University, CA

Program: CREDE Program 2: Professional Development

Funding Level: $400,000. Year 1 $100,000; Year 2 $100,000; Year 3 $100,000; Year 4 $50,000; Year 5 $50,000

Project Period: 07/07/96–06/30/01

Project Design: This study responds to the needs of leaders of schools beset with racial and ethnic conflict by examining the characteristics and processes of exemplary leadership in fostering unity rather than divisiveness. The research questions are:

- How do school leaders or leadership teams address tensions and conflict that may be related to race or ethnicity?

- How do school leaders or leadership teams bring about unity rather than division among different ethnic groups on campus?

This is a 5-year study that employs a qualitative, multiple case study design. The first 3 years of the project are devoted to creating 21 case studies describing exemplary or proactive approaches and practices K–12 school leaders are using to address ethnic conflict and promote positive intergroup relations. To be selected for the study, sites go through a nomination and screening process. Selected schools all meet the following project criteria: serve a diverse student population with at least three major ethnic groups that each constitute a sizable proportion of the total school population and have a majority of students on free or reduced lunch; have a history of racial/ethnic conflict or tension; and have developed or are developing proactive approaches to addressing racial/ethnic tensions and building positive relations among different ethnic groups. Checks are made with the Office for Civil Rights and the State Department of Education Compliance unit to determine whether selected schools have had any recent civil rights violations complaints.

Nine of these case study sites are located in the San Francisco Bay Area and another 12 sites are being selected nationwide. CREDE provides funding for 9 of the 21 sites (3 local and 6 national), and the remaining 12 sites (6 local and 6 national) are funded through a Field Initiated Studies grant. The primary means of data collection are semistructured interviews with a range of stakeholders at each site including administrators, teachers, students, and parents; observations of key events and activities such as classes, leadership meetings, and student activities; and documents and records provided by the schools.

The final 2 years of the project are designed to have an impact on practice. The case studies will be used to develop case methods materials for future school administrators, as well as inservice administrators and other constituents who may benefit (e.g., teacher leaders, parent leadership groups, community organizations). The focus of the study is on exemplary or proactive approaches and practices.

Educational Significance of the Study: Several significant patterns or themes are already emerging which will contribute data-supported information on ways to address ethnic/racial diversity issues:

- There appear to be important differences in how ethnic/racial conflict is perceived and approached at elementary, middle, and high school levels—more overt racially conflictual behavior exists in high schools as well as more overt discussion among staff of race and ethnicity as potential factors in conflicts.
- There may be cultural differences in how conflict is defined and manifested—a range of expressions of conflict exists, from the more overt confrontation and aggression to more subtle cues such as withdrawal.
- Leadership in the area of ethnic relations comes from a variety of sources in addition to the traditional principal role—leadership from teams, teacher collaboration groups, parent groups, and district leaders.
- There are different dimensions of commitment to addressing conflict and building positive intergroup relations—individual teacher commitment through classroom teaching projects; programmatic commitment such as a structure or program in place such as a conflict resolution program; and systemic commitment where all members of a school community work together and share a common sense of purpose.

Status of Study and Products: The first cycle of data collection (136 interviews, 88 observations, and documents) at all 9 sites in the San Francisco Bay Area was completed in June when the school year ended. In September 1997, the second cycle of data collection began.

All project staff attended a 1 day workshop to familiarize the team with the case methods approach used in the preparation of teachers and administrators. The workshop was led by Judith Shulman (author of *Diversity in the Classroom: A Casebook for Teachers and Teacher Educators*). Project staff learned to use the new qualitative software program for the study, performed logistical support, encoded collected data, and distributed over 500 nomination materials for the national sites via the CREDE newsletter, *Education Week*, and various list serves. A feedback session was held in September at one of the sites to share preliminary findings and elicit input from faculty through discussions and a short survey. Similar sessions are planned for the other eight sites.

OERI Contact: Beverly Coleman, 202–219–2280

Title of Study: Family, Peers, School, and Community (CREDE Program 3)

Principal Investigator(s): Catherine Cooper, University of California, Santa Cruz, CA

Program: National Educational Research and Development Centers: Center for Research on Education, Diversity, and Excellence (CREDE)

Funding Level: $1,844,246. Year 1 $261,627; Year 2 $374,376; Year 3 $350,248; Year 4 $402,540; Year 5 $462,337

Project Period: 7/1/97–6/30/01

Project Design: The preparation of students for academics occurs in a variety of sociocultural contexts—not only schools but also families, peers, and communities. This program studies links across these contexts as they affect students' learning, academic skills, attitudes toward school, close relationships, and the construction of their educational, vocational, and moral values. This program contains six projects.

Research suggests that creating mutually respectful family-school partnerships can enhance students' academic achievement and promote the development of positive identities. Several projects in this program investigate the learning activities, processes, and goals of ethnic minority and low-income families at different grade levels. One project is studying the role of older siblings in assisting with homework in immigrant families with limited schooling and English proficiency. Another is developing and studying computer classes for elementary school students and their parents.

Peers play a key role in students' academic, vocational, and moral development. The factors that promote or impede peer contributions to students' academic achievement and their educational, vocational, and moral aspirations is the subject of four projects. Several studies also examine family-school-community partnerships. Two are studying how community organizations provide support services to youth and their families. One of these looks specifically at language minority students.

The program studies a wide range of students and communities—Hispanic, Asian American, American Indian, African-American, and low-income European American. This enables CREDE to address questions regarding the influence of families, peers, school and community on a wide range of students.

Educational Significance of the Study: Research suggests that creating mutually respectful family-school partnerships can enhance students' academic achievement and promote the development of positive identities. While studies of schools abound, few focus on the home lives of students at risk for educational failure.

Peers also play a key role in students' academic, vocational, and moral development. Peers can create an oppositional culture that pressures students to devalue the school or a supportive role that reinforces the goals and attitudes of families and schools.

School- and family-based interventions by themselves often fail to provide sufficient academic support for students, due to the profound changes in families (e.g., single parenthood, dual career families) that make it difficult for them to provide traditional supports to their children. An emerging alternative is programs of partnership between schools- and community-based organizations. While partnerships between schools- and community-based organizations (CBOs) hold promise for enriching the education of many students, there is little documentation or research on programs for language and other minority students. Results of the studies will help to inform the development of new school-CBO partnerships for such groups.

OERI Contact: Oliver Moles, 202–219–2211

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Title of Study: National Survey of School/Community-Based Organization Partnerships Serving At-Risk Students (Project 3.1)

Principal Investigator(s): Carolyn Adger, Center for Applied Linguistics, Washington, DC

Program: CREDE Program 3: Family, Peers, School, and Community

Funding Level: $99,800. Year 1 $49,831; Year 2 $49,969

Project Period: 6/1/96–6/30/98

Project Design: This project is studying partnerships between schools and community-based organization (CBOs) that support the academic achievement of language minority students placed at risk of school failure. In general, CBOs are organizations committed to helping the members of identifiable groups obtain health, educational, and other basic human services. Arrangements with schools vary—services may be direct and formal or otherwise, and students may be served either at the CBO site or by the CBO in the schools.

The purposes of this study are to determine what factors lead to program success, what challenges must be overcome in establishing and maintaining partnerships that provide services to language minority students, and what pitfalls are to be avoided. Specifically, the major research questions are:

- What types of partnerships between schools and community-based organizations aim to promote the academic achievement of language-minority students?
- Of these partnerships, which are most successful?
- What makes them successful? What are the essential features of a successful partnership?

In general, characteristics of successful programs may include demonstrable impact on academic achievement; availability of adequate resources over time including leadership, funds, and personnel; significant planning time; program flexibility; responsiveness to the needs and capabilities of program participants; and ways of assessing progress toward program goals and using this information to improve the program. In this study, researchers are attempting to identify and survey all such partnerships that serve language minority students in order to determine the characteristics of effective programs.

In addition, the researchers are identifying, initially by nomination, 10 to 15 such partnerships to study in more depth. Site visits are being conducted at these sites and the information gathered (from observations, interviews, and program documents) are analyzed for commonalities and differences that indicate criteria for partnership success. Many kinds of school-CBO partnerships serving elementary and secondary language minority students are being examined.

Educational Significance of the Study: School- and family-based interventions by themselves often fail to provide sufficient academic support for students, often due to the profound changes in families (e.g., single parenthood, dual career families) that make it difficult for them to provide traditional supports to their children. An emerging alternative is programs of partnership between schools and community-based organizations. While school-CBO partnerships hold promise for enriching the education of many students, there is little documentation or research on programs for language minority students. Results of the study will help to inform the development of new school-CBO partnerships for such groups.

Status of Study and Products: The study is ongoing. Researchers have found that partnerships may operate a number of programs, but not all of them target academic achievement. This 2-year study will be completed in 1998.

OERI Contact: Oliver Moles, 202–219–2211

Title of Study: Community-Based Organizations/School Relationships in Urban Southeast Asian Communities (Project 3.2)

Principal Investigator(s): Adeline Becker and Francine Collignon, The Education Alliance, Brown University, Providence, RI

Program: CREDE Program 3: Family, Peers, School, and Community

Funding Level: $293,535. Year 1 $39,155; Year 2 $41,733; Year 3 $85,058; Year 4 $127,589

Project Period: 7/1/97–6/30/01

Project Design: This study is based on research suggesting that the academic achievement of students can be enhanced through the creation of strong partnerships between family, school, and community-based organizations (CBOs) including local health and social service agencies that serve the needs of children and families. The project investigates research questions concerning barriers to educational services including language, culture, and economic status affecting four Southeast Asian populations in Providence, Rhode Island: Cambodians, Laotians, Hmong, and Vietnamese. The research seeks to identify factors such as educational background, cultural support networks, and community-based organizations that could strengthen collaboration among the schools, homes, and communities in which these students reside.

The main research questions are:

- What factors in the multiple cultures—home, school, and community—of Southeast Asian students prevent/promote their achieving to high academic standards?
- In what ways can school-based and community-based programs collaborate to improve on the achievement of Southeast Asian students?

After identifying the Southeast Asian communities in Rhode Island, researchers are conducting ethnographic research in a yet-to-be determined number of schools, community organizations, and families in the Providence area. The purpose is to identify and map existing resources and services and to determine unmet needs that influence the students' ability to achieve to high academic standards. The project team includes bilingual-bicultural members as ethnographic participant observers who engage the Southeast Asian groups, key school personnel, parents and community leaders, and service providers. Information is being collected through dialogue, observations, formal and informal interviews, bilingual questionnaires, reports, brochures, and other program materials.

Educational Significance of the Study: The study expects to identify the resources within the school system which address the academic needs of Southeast Asians, indicate which services within community organizations support their needs, identify gaps in service provision that detract from the academic achievement of Southeast Asian students, review ongoing projects and initiatives in CBOs and schools for practices that support high achievement, and identify the matches between existing programs in CBOs and schools needing those services or create new matches.

Southeast Asian populations have had a profound demographic impact on the state of Rhode Island. Since they are among the newest arrivals to the state, schools as well as service providers are unfamiliar with these populations. This research should help schools and community based organizations provide services more effectively to them. The results should be of use to similar organizations in other locations with a large population of Southeast Asians

Status of Study and Products: Project began in year 2 of the center. It is currently identifying where Southeast Asian communities are located in the state, and beginning to interact with key contacts in these communities, the school system and community-based organizations in Rhode Island.

OERI Contact: Oliver Moles, 202–219–2211

Title of Study: Navigating and Negotiating Home, School, and Peer Linkages in Adolescence (Project 3.3)

Principal Investigator(s): Margarita Azmitia and Catherine Cooper, University of California, Santa Cruz, CA

Program: CREDE Program 3: Family, Peers, School, and Community

Funding Level: $477,972. Year 1 $90,643; Year 2 $87,416; Year 3 $93,226; Year 4 $100,325; Year 5 $106,362

Project Period: 7/1/97–6/30/01

Project Design: This project investigates how students, family members, peers, teachers, and community-based organizations coordinate students' experiences across these worlds in the years from elementary to junior high school, a time of academic risk for many students. Major research questions are:

- What continuities and discontinuities occur across the daily activities, relationships, and goals of early adolescents' family, peer, school, and community worlds?
- What resources and difficulties do early adolescents and their parents perceive in coordinating these four worlds?
- How are students' resources and difficulties in coordinating these worlds reflected in their school achievement and their long-term schooling, work, and moral goals?
- How do students' experiences with community organizations and peers from other ethnic backgrounds contribute to coordinating their worlds, succeeding in school, and formulating their long-term goals?

This study focuses on low-income Mexican American and European American male and female students in California. The students in the sample are from 100 families, and are recruited during the students' last year of elementary school. During this school year, they are observed in the classroom and interviewed at home. The primary care giving parent also is interviewed at home. The following year the interviews are repeated. Information on students' academic achievement is obtained from school records and teacher ratings.

The roles of guidance, planning, negotiation and conflict resolution, and emotional support are being studied in relation to academic achievement. The role of older siblings is receiving special attention. If parents are unable to help their children with schoolwork because of limited education or work schedules, siblings may become the primary source of guidance. Study findings confirm this.

Educational Significance of the Study: As students move from elementary to junior high school, teachers and parents expect them to juggle schoolwork, chores, and active social lives, plan future school and career goals, and maintain high moral standards and values. Many students also participate in the sports, arts, cultural, religious, and recreational activities offered by community organizations. Surprisingly little is known about how students coordinate their family, peer, school, and community worlds; how others help or impede this coordination; and how these experiences relate to school achievement.

This study aims to show how this coordination takes place and its effects on school performance. Results should be applicable to other small urban communities of low-income Mexican American and European American families and students who are similar to this sample.

Status of Study and Products: A newsletter has been produced and shared with parents and school personnel.

OERI Contact: Oliver Moles, 202–219–2211

Title of Study: Developing Immigrant Parents' Computer Literacy in Partnership with Students' Learning (Project 3.4)

Principal Investigator(s): Richard Duran, University of California, Santa Barbara, CA

Program: CREDE Program 3: Family, Peers, School, and Community

Funding Level: $197,282. Year 1 $36,908; Year 2 $37,818; Year 3 $39,017; Year 4 $40,918; Year 5 $42,621

Project Period: 7/1/97–6/30/01

Project Design: This study provides computer education activities and workshops to the parents of language minority Mexican American elementary school children outside of regular school hours. Accompanied by their children, parents are taught how to use the word processing, graphics processing, and multimedia software their children use at school and in school computer clubs, how to access the Internet and World Wide Web, and how to conduct small scale inquiry projects with their children.

The key question is how to construct a computer training program that will help immigrant parents acquire computer literacy skills and assist their children's school learning. Major research questions are:

- What strategies will help immigrant parents learn to use computers in a manner linked to their children's use of computers for learning activities in and out of school?
- Over a multiple-year period, what are the effects of computer training on parents and on their involvement in children's in- and out-of-school learning?
- Over several years, what improvement in students' learning performance is associated with parents' growth in computer skills?

The basic design is a case study combining qualitative and quantitative methods to develop and document the implementation of computer training and its effects on parents and children. The training is in two elementary schools. Over the 5 years of the project, they expect to serve between 72 and 100 family mentors. During the developmental period, before and after training interviews with parents assess changes in their knowledge about how to use a computer including skills that prove difficult to acquire.

Later work will refine the training and assessment activities and investigate activities to connect parents' training to children's school learning. Information on parents' educational background and other characteristics will also be obtained via interviews with them to determine whether they are related to parents' readiness to acquire computer literacy skills and to collaborate or assist children with learning activities. The content of products parents produce will also be analyzed including the themes of their computer activities and the conversational skills they use in producing the products.

Educational Significance of the Study: The study aims to develop and refine a computer literacy skills program for Spanish-language parents with limited English proficiency. This would give parents new usable computer skills and ways of helping their children with school work and after-school computer learning activities.

Status of Study and Products: A manual for implementing an immigrant parent computer education program is being developed to assist others who are interested in developing a similar program. In addition, findings will appear in technical and journal reports.

OERI Contact: Oliver Moles, 202–219–2211

Title of Study: The Role of Classroom Social Organization in School Adjustment and the Development of Peer Relationships and Teacher-Student Relationships (Project 3.5)

Principal Investigator(s): Peggy Estrada, University of California, Santa Cruz, CA

Program: CREDE Program 3: Family, Peers, School, and Community

Funding Level: $567,556. Year 1 $84,245; Year 2 $111,226; Year 3 $118,908; Year 4 $123,947; Year 5 $129,230

Project Period: 7/1/97–6/30/01

Project Design: This project focuses on the role of classroom social organization in educational functioning and the development of peer relationships and teacher-student relationships. The social organization of teaching and learning determines with whom youngsters come into contact and the nature of the activity in which they engage. The following research questions are posed:

- Do classrooms characterized by activity settings that provide youngsters with opportunities for sustained joint productive activity (i.e., where teachers and students work together for a common goal or product) and shared communication with teachers have higher overall levels of educational functioning and higher quality teacher-student relationships?

- Do classrooms characterized by activity settings that provide youngsters varied roles (e.g., expert, novice); positions of power; language codes (e.g., academic, informal, English/ Spanish) and patterns of goals, incentives, and products (e.g., individual, collective) have higher overall levels of educational functioning?

- Do classrooms characterized by more joint productive activity and shared communication among diverse students have more fluid and less hierarchical peer relationships, more cross-diversity friendships, higher quality friendships, and higher overall levels of educational functioning?

- Is the quality of peer relationships and teacher-student relationships higher when educational functioning is higher?

The study seeks to discover how these factors relate to each other as well as to understand their essential components. The project will describe conditions in the schools and compare types of schools. The schools in the study represent the major variants of demographics, language programs, and patterns of classroom organization in culturally and linguistically diverse schools.

In year 1, the school-level social organization of nine schools was investigated and three patterns of social organization emerged. At one extreme the pattern of social organization results in complete integration throughout the day. At the other extreme there is segregation among language/ethnic groups throughout all or most of the instructional day. In the middle of the continuum, a third pattern of social organization results in a moderate amount of contact among different groups.

In year 2, from these schools 25 1st- and 4th- grade classrooms were examined that represent variation in features of social organization and pedagogy using the Activity Settings Observation System (ASOS), an economical and accurate method for recording and classifying crucial features of school activities and pedagogy. Classroom-level educational functioning data was also gathered using existing measures of school performance (e.g., achievement test scores, grades absences, grade retentions, special education referrals).

In year 3, a subsample of approximately six to eight classrooms representing the range of patterns of social organization and educational functioning will be selected for more indepth study. In years 3 and 4, broader measures of educational functioning will be added (i.e., attitudes toward school and behavioral conduct) as well as measures of the qualities of peer and teacher-student relationships. In year 5, an analysis, synthesis and integration of findings from various elements of the project will be provided.

Educational Significance of the Study: The social organization of teaching and learning determines the possibilities for youngsters' relationships with teachers and peers and also their developing school-relevant knowledge and competencies. In culturally and linguistically diverse classrooms, social organization becomes critical for a number of reasons. Without teacher intervention, students will limit their interaction to others like themselves and may not expand their skills and knowledge from broader contact. Teachers can expand or limit opportunities for diverse students to increase their school-relevant competencies , such as by seating and activity grouping assignments. The study findings will be useful for similar students and schools to show how classroom social organization and related factors interact to affect the quality of classroom life and student performance.

Status of Study and Products: A report has been written on the role of classroom social organization in educational functioning and the development of peer relationships and teacher-student relationships in nine diverse schools. Future reports will analyze the more detailed data being collected and cover other aspects of the research questions.

OERI Contact: Oliver Moles, 202-219-2211

Title of Study: Peer Group Influence and Academic Aspirations Across Cultural/Ethnic Groups of High School Students (Project 3.6)

Principal Investigator(s): Patricia Gandara, University of California, Davis, CA

Program: CREDE Program 3: Family, Peers, School, and Community

Funding Level: $208,101. Year 1 $48,792; Year 2 $50,792; Year 3 $52,292; Year 4 $56,535;

Project Period: 7/1/97–6/30/01

Project Design: Peers can exert extraordinary influence over each other, including the formation and support of personal goals and academic aspirations. However, emerging research suggests that the structure and formation of adolescent peer groups, as well as their patterns of influence, may differ substantially by ethnic group. The goal of this study is to investigate these processes across four ethnic groups—Hispanics, European Americans, African-Americans, and recent Asian immigrants—from lower income and working class communities in which students are commonly at risk for low academic aspirations and school failure.

The major research questions are:

- Across cultural/ethnic groups, what factors influence the formation and change of peer groups?
- Across cultural/ethnic groups, how do peers support or undermine academic goals of their friends?
- What determines the relative influence of multiple peer groups?
- Across cultural/ethnic groups, how do school context and family background mediate the influence of peers and vice versa?

One hundred and twenty students from four ethnic groups is being followed for 4 years—from initial contact with high school in the 9th grade through high school graduation. The study is being conducted in one urban and one rural school in northern California. Participants are males and females, and higher achieving and "average" achieving students in roughly equal proportions. They are being surveyed periodically for evolving attitudes toward schooling and postsecondary education and meet regularly for focus group conversations on their social and academic adaptation to high school and their peer and friendship groups both at school and in the community. The field researchers are ethnically matched to the target students. Some outcomes of interest are school retention, attitudes toward schooling, grades, academic preparation and aspirations, and postsecondary choices.

School wide surveys also are being collected each year on all students in the grade being studied to chart the development of attitudes over time and to provide a broader context for understanding the behavior of the target students. Interviews with school staff, observations on site, and review of school documents also help to build a picture of the context and dynamics of the school. Parents of the target students also are being interviewed annually to assess their involvement with their adolescents and the types of messages that students are receiving from home regarding academic develop-

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ment and aspirations, and to understand the ways in which parents act to influence their children's choices across ethnic groups.

Educational Significance of the Study: Peer groups play an important role in the academic achievement of adolescents. They form a critical part of the environment of schools, and they create and maintain a separate culture from that of the home and the community of adults in which the adolescent is raised. Many young people spend more time with peers than they do with parents or other family members. Because peers can exert extraordinary influence over each other, it is important to understand their role in the formation and support of personal goals and academic aspirations. There are also likely to be periods in high school when students are most vulnerable to external influence and when appropriate intervention and support can be most beneficial in helping students to develop strong personal and academic identities. These critical periods will be identified. The findings should apply to similar students elsewhere in the state and beyond from the same ethnic groups living in the same social class conditions.

Status of Study and Products: The project has just begun in year 2.

OERI Contact: Oliver Moles, 202–219–2211

Title of Study: Instruction in Context (CREDE Program 4)

Principal Investigator(s): Beth Warren, TERC, Cambridge, MA; and Norma González, University of Arizona, AZ

Program: National Educational Research and Development Centers: Center for Research on Education, Diversity, and Excellence (CREDE)

Funding Level: $1,984,031. Year 1 $411,384; Year 2 $444,368; Year 3 $393,591; Year 4 $374,421; Year 5 $360,249

Project Period: 4/1/96–3/30/01

Project Design: This program aims to increase knowledge and improve instructional strategies for children at risk by investigating teaching, curriculum and the school in the context of the communities in which the children live and learn (including peers, parents, community organizations, and local businesses); the workplace setting; the world of mathematicians and scientists; and the historical, linguistic, and values of these cultures.

In each of the projects, the researchers will accept the communities' sociocultural activities as the contexts for making school work meaningful, and will devise school activities to bridge home and school, thus building classroom communities that can produce high academic achievement. Five projects make up this program of investigation.

Educational Significance of the Study: This program attempts to provide an understanding of the communities in which children at risk live and learn. By sharing this understanding with teachers and by and linking these communities together, it is hoped that schools will be able to build classrooms that can help at-risk students to achieve at high academic levels.

OERI Contact: Carole Lacampagne, 202–219–2207

Title of Study: Teaching Science to At-Risk Students: Teacher Research Communities as a Context for Professional Development and School Reform (Project 4.1)

Principal Investigator(s): Beth Warren and Ann Roseberry; TERC, Cambridge, MA

Program: CREDE Program 4: Instruction in Context

Funding Level: $759,305. Year 1 $114,810; Year 2 $139,601; Year 3 $145,547;
Year 4 $164,203; Year 5 $183,144

Project Period: 4/1/96–3/30/01

Project Design: The study concerns the evolution of two professional development communities for teachers of language minority students, focusing on the teachers' professional growth in science and mathematics, and classroom research on their students' discourse and learning. It investigates: In what ways do these activities, in interaction, form the foundation for creating new pedagogical possibilities in science for language minority students? How do professional development seminars themselves develop as learning communities and how do local conditions support or hinder their development?

Three groups of research questions are being considered:

- What scientific understandings and practices do teachers develop in these research communities of practice? How are these supported within the teacher research community? How do they shape and how are they shaped by classroom practice?
- What understandings do the teachers develop about their students' culturally-based ways of knowing and talking and how do these relate to science learning? How do these understandings develop within the teacher research community? How do they shape and how are they shaped by classroom practice?
- What kinds of practices, dilemmas, and experiences are key in the learning of individual teachers and of groups? How can these inform our theoretical and practical knowledge of teacher professional development, especially for the education of language minority students?

These studies are based in ethnographic investigation of two professional development communities, one in Cambridge, Massachusetts, and the other in New York City District #6. Participants' talk and activity in the seminars and in their classrooms are being documented through videotape and field notes. Analyses focus on understanding the discourse of practice that emerges as teachers learn science and mathematics and study their children's talk and learning in science. The studies emphasize close analysis of individual teachers' learning trajectories in the context of group interactions.

The analyses focus on the following interrelated aspects of teachers' experience in the professional development seminars: the central problem or idea with which they are grappling (scientific, mathematical, linguistic, or pedagogical), the ways in which they are puzzled, and their emerging interpretations; conversation and social interaction, that is, how meanings are negotiated, contributions taken up, norms developed, insights gained, conflicts and resolutions expressed within the professional community; and sense-making resources, that is, how everyday, scientific, and mathematical tools, symbol systems, forms of argument are used in understanding problems in science, mathematics, and classroom discourse, how they are used by teachers and how they become part of the community's discourse.

Educational Significance of the Study: These studies should yield an important perspective on how bilingual and ESL classroom teachers can work together to develop effective methods of teaching science and mathematics in the cultural context of their students' lives.

Status of Study and Products: The first year of the Cambridge teacher seminar has been completed and teacher collected samples of student discussions using audiotape and videotape have been transcribed and analyzed in the teacher seminars. Videotaping of selected classrooms has also begun.

OERI Contact: Carole Lacampagne, 202-219-2207

Title of Study: Linking Home and School: A Bridge to the Many Faces of Mathematics (Project 4.2)

Principal Investigator(s): Marta Civil, Norma González, and Rosie Andrade, University of Arizona, AZ

Program: CREDE Project 4: Instruction in Context

Funding Level: $409,613. Year 1 $78,518; Year 2 79,930; Year 3 $81,626; Year 4 $83,528; Year 5 $86,011

Project Period: 4/1/96–3/30/01

Project Design: For the past 10 years, the Community Literacy Project and the Funds of Knowledge for Teaching Project carried out work based on the idea that household and community knowledge can provide strategic resources for classroom practice. This approach analyzes the sociocultural history of the households of language-minority children, as well as their labor history, which often reveals accumulated bodies of knowledge and an array of skills, information and strategies. In a Southwestern context, for example, households of rural origin may know about farming and animal management, whereas those with urban roots may know about construction and other matters such as trade, business, and finance on both sides of the United States/Mexican border.

The investigators' previous work has laid the foundation for helping teachers develop the skills to research student households for their mathematical potential. BRIDGE focuses on developing communities of learners interested in furthering the teaching and learning of mathematics. The research questions to be addressed by this study include:

- What are the effects of mathematical study groups on teachers' professional development and pedagogical practices?
- How can students' household and other out-of-school activities be used to enhance their inside-of-school mathematical learning?
- How do we help students learn to generalize from their everyday knowledge to an abstract level with potential academic use?
- What is the role of parents in changing teaching practices?

This is a qualitative study, focusing on teachers-as-researchers. The three key components of the study center around mathematics: household ethnographic analysis, teacher-researcher study groups, and classroom implementation. A fourth component, parents as learning resources, directly involves parents in the mathematics-learning process. The study is being conducted in elementary and middle schools with high proportions of Hispanic and other language minority students.

Ten teachers are participating in teacher-researcher study groups, collecting ethnographic data and using it to guide curriculum and pedagogy. Researchers observe the subject teachers in the classroom and in the study groups to assess their use of the information gathered to enhance students' inside-of-school mathematical learning. In addition, researchers interview parents of the students in these teachers' classes.

Educational Significance of the Study: This study should uncover effective links between children's mathematical knowledge gained in the home and the community to effective teacher practice in teaching mathematics in the classroom.

Status of Study and Products: Under development are short working papers on the interim findings of the curriculum unit, parent participation, and teacher-researcher study groups.

OERI Contact: Carole Lacampagne, 202–219–2207

Title of Study: At-Risk Preschoolers' Questions and Explanations: Science in Action at Home and in the Classroom (Project 4.3)

Principal Investigator(s): Maureen Callanan, University of California, Santa Cruz, CA

Program: CREDE Program 4: Instruction in Context

Funding Level: $405,821. Year 1 $72,366; $Year 2 75,398; Year 3 $61,273; Year 4 $106,690; Year 5 $90,094

Project Period: 4/1/96–3/31/01

Project Design: This study investigates the spontaneous conversations about scientific topics that emerge in children's interaction with parents and teachers—at home, in school, and in the museum setting—in an attempt to answer the following research questions:

- How can adult and preschooler interaction, and links between home and school be strengthened in order to increase students' understanding of the natural world, technology, and other domains of science?
- How can an inquiry based approach to learning be used in a bilingual environment?

Qualitative research methodologies are being used to investigate how links between school and home can be strengthened in order to increase and foster the type of response to child-initiated questions that will help to encourage children's natural curiosity and focus their interests in ways that will increase their school learning of similar topics.

Six teachers and 76 students are participating in the study. Researchers utilize field notes of classroom and field trip observation, videotapes of interactions, and teacher journals commenting on their teaching style, the children's learning in hands-on science projects, and the children's questions about ongoing science projects (e.g., butterfly hatching). Periodic interviews with parents and teachers regarding children's questions and interests, at school and at home, in science-related topics are also taking place. For example, parents are interviewed by phone after visits to a museum and information is gathered on what children say about the museum trip. Parents are also interviewed periodically about children's questions at home.

Educational Significance of the Study: Children's preschool development is enhanced by taking advantage of their natural curiosity. Any parent knows that the incessant "whys" of preschoolers can be maddening, but it is adults' responses to these "whys" that stimulate or inhibit children's early learning. This study will document bilingual child/adult conversations in the context of science to determine the best approaches to capturing the child's natural curiosity for early science learning.

Status of Study and Products: A short working paper on the interim findings of the curriculum unit, parent participation, and teacher-researcher study groups is under development.

OERI Contact: Carole Lacampagne, 202–219–2207

Title of Study: Developing a Culturally and Linguistically Responsive Science Curriculum (Project 4.4)

Principal Investigator(s): Trish Stoddart, University of California, Santa Cruz, CA

Program: CREDE Program 4: Instruction in Context

Funding Level: $154,007. Year 1 $47,746; Year 2 $52,136; Year 3 $54,125

Project Period: 4/1/96–3/31/99

Project Design: This research focuses on science education, language, and culture with a particular emphasis on the education of bilingual, Latino, and migrant worker children. The analysis focuses on issues of language and discussion (discourse) in science classes and the influence of language and culture on the development of students' scientific conceptions. The plan includes intensive study of student learning, analysis of the funds of knowledge about science in the home and community, and detailed analysis of the instructional interactions between students and teachers.

Research questions to be considered are:

- What funds of knowledge do Latino children from rural and agricultural families bring to science learning in school?
- How can the science curriculum be elaborated to integrate student's linguistic and cultural resources?
- How can teachers be taught to implement culturally and linguistically responsive instructional practices in science teaching?
- How can effective bilingual science education strategies be institutionalized into the educational system?

The research is both qualitative and quantitative methodology. Researchers are conducting classroom-based studies in three different school settings, each of which represents a different approach to teaching language minority students: (1) teachers alternate between English and Spanish when teaching, (2) teachers use only Spanish, or (3) teachers use only English. The study compares science learning outcomes under the 3 different approaches in a total of 10 elementary classrooms, grades 4 through 6, in 9 Central California public schools. The classroom-based case studies involve indepth interviews with teachers, students and parents that focus on their science concepts, view of teaching and learning and bilingual education.

Researchers use ethnographic data collection methods to document teaching and learning interactions, including systematic participant classroom observation, audiotaping and videotaping of classroom events, and debriefing with students and teachers.

In addition to conducting case studies of nine classrooms, researchers are collecting and analyzing data on all other teachers and students in the case study schools. The longitudinal study includes: survey data on teacher demographics, science teaching, bilingual/multicultural education, and self-reported teaching practices on the approximately 50 teachers; and science and language achievement tests and attitude scale scores of the approximately 1,500 students.

Educational Significance of the Study: Much controversy exists concerning best practices for the teaching and learning of language minority students. This study addresses that issue by comparing science learning outcomes under the three dominate approaches—English only, Spanish only, and English and Spanish combined—in order to shed light on how teachers' language status and their approach to bilingual education influences the instructional interaction between students and teachers.

Status of Study and Products: Baseline data has been collected and is being analyzed.

OERI Contact: Carole Lacampagne, 202–219–2207

Title of Study: Teaching and Learning in the Context of African-American English Culture Community (Project 4.5)

Principal Investigator(s): Michele Foster, Claremont Graduate University, CA

Program: CREDE, Program 4: Instruction in Context

Funding Level: $232,323. Year 1 $95,000; Year 2 $97,303; Year 3 $40,020

Project Period: 4/1/96–3/31/99

Project Design: This study is investigating whether teachers who are involved in a professional development program that exposes them to cultural and linguistic information about the students they teach are able to translate this learned knowledge into appropriate practice and understanding of the resources their students represent. The following research questions are addressed:

- How do teachers involved in a professional development program designed to teach them about language and cultural issues related to African-American students translate the information into curricular, instructional, and pedagogical strategies?

- What effects do curricular and instructional strategies that build on the linguistic and cultural background of African-American students have in the classroom?

The study is designed to measure the effects of professional development in eight San Francisco elementary and middle schools. Ethnographic and sociolinguistic techniques are being used to collect data in the classrooms of all participating teachers. Researchers observe training sessions, interview teachers, observe teachers and students in their classrooms, and video-record classroom events in order to determine if and how teachers are making classroom applications of knowledge gained about issues related to African-American culture, and the reaction of their students.

Educational Significance of the Study: The importance of this project is underscored by the recent debate on the use of student dialects in the classroom to ensure comprehension and build cohesiveness across student groups, especially minority and nonminority students. Whether teachers formally use the linguistic resources of their students or not, it is important for teachers to be aware of these resources to promote student interest in learning. The questions posed by the project are important in order to determine the extent to which professional development lessons for teachers are put to actual use in the classroom and to gauge their impact. The results will be a better understanding of links between teacher training and classroom management behaviors that are designed to improve teaching and learning.

Status of Study and Products: Permission to conduct the study and for teachers to attend summer and school year training sessions. Some teachers' classrooms have been observed and videotaped. Teachers have been interviewed, and a coding scheme to organize the data is being developed.

OERI Contact: Carole Lacampagne, 202–219–2207

Title of Study: Integrated Reform (CREDE Program 5)

Program Investigator(s): Sam Stringfield, Johns Hopkins University, Baltimore, MD; and Yolanda Padrón, University of Houston, TX

Program: National Educational Research and Development Centers: Center for Research on Education, Diversity, and Excellence (CREDE)

Funding Level: $4,563,326. Year 1 $1,093,078; Year 2 $1,000,692; Year 3 $906,853; Year 4 $923,688; Year 5 $639,015

Project Period: 7/1/96–6/30/01

Project Design: This Program brings together eight development projects to try to achieve a comprehensive integration of principal factors affecting education reform. These projects involve the design, enactment and/or evaluation of major multielement educational programs, each of which has the potential for significant impact on local, state, tribal, and national policy.

The projects deal with a redefinition of the term "at-risk" and address the question of what are the dimensions of this national problem to which school reform should be addressed; an assessment of the differential effects of programs on a diversity of linguistic and cultural student populations; the upscaling of project AVID, a highly successful "untracking" program for at-risk high school students; a program to teach resiliency, and a program to serve Appalachian children; a major demonstration of reorganizing the relationships between school and tribal members; and an innovative study of the linguistic, cognitive, social, and community consequences of a native language revival program in Hawaii.

Educational Significance of the Study: The increasing diversity of the at-risk student population, in racial/ethnic/linguistic-cultural terms, not only multiplies the questions that are raised about improving the effectiveness of their education, but emphasizes the need to find information and answers that cut across the at-risk student population and the strategies being used to educate them. The projects in this program all build on knowledge bases in research, and ask at least the next important question and/or make an important comparison between educational strategies or an evaluation of one.

Throughout this research can be found the challenge of dealing with the complexity of the at-risk environment. Since research must often take apart and study the individual elements or characteristics of those environments before we can see the implications and options in what we may try to change for the better, these projects focus on both the dimensions of the problem, diverse strategies, and the challenges posed by particular characteristics of these environments.

OERI Contact: Jerome E. Lord, 202–219–2242

Title of Study: Estimating the Population of At-Risk Students Using Multiple Risk Indicators (Project 5.1)

Principal Investigator(s): David Grissmer, Rand Corporation, Washington, DC

Program: CREDE Program 5: Integrated Reform

Funding Level: $495,488. Year 1 $224,552; Year 2 $120,710; Year 3 $96,716; Year 4 $53,510

Project Period: 7/1/96–6/30/01

Project Design: The purpose of this project is to improve the estimates of the number and the characteristics of students at risk of educational failure. It has three major objectives:

- Develop an improved framework, conception, and definition of the risk of educational failure.
- Determine estimates using the new and alternate definitions of the size, location, racial/ ethnic mix, and other characteristics of at-risk students.
- Assess how this population of at-risk students will be changing in the future.

The meeting of these objectives will be the result of four different areas of work. First, the researchers are incorporating longer term outcome measures and various concepts of students' resiliency into improving the conception and definition of at-risk students. Students' later experiences—work experience, use of welfare, involvement with the criminal justice system, marriage and family formation—are linked to data from the National Longitudinal Survey of Youth (NLSY), the NLSY Mother/Child survey (NLSY-MC), and the National Educational Longitudinal Study (NELS) on school performance and other characteristics of students for better identification of at-risk students. Another area of work estimates how much the variance on state National Assessment of Educational Progress (NAEP) scores is attributable to family characteristics and how much to educational policies and programs.

The third area of work is to develop more complex—interactive and nonlinear—models so that we can better understand the different effects that various characteristics may have in different situations, particularly on students scoring in the bottom quartile of test scores. These new predictive statistical models will then be applied to the data from NLSY, NLSY-MC, and NELS in order to arrive at estimates of at-risk students, based upon models that account for various at-risk characteristics.

In addition, researchers will use these new models to identify the importance of additional characteristics and to test further the potential effects of several, concurrent kinds of risk—as opposed to a single factor—on student performance. This work will extend the predictive nature of the models and trends in order to assess how the population of at-risk students will be changing in the future.

Educational Significance of the Study: Studies show that students highly at risk can and do very well. These positive outcomes can usually be linked to resiliency factors in themselves and their environments. This study leads to redefining at-risk students to account for the presence or absence of resiliency factors. The resulting enriched definition will be useful in realigning policies so that they address more specifically the various characteristics of at-risk populations. The study has already found that a surprisingly large amount of variance on the state NAEP scores is due to family variables and to other aspects of social capital, and that certain state policies are also significant. In other words, the evidence is beginning to show that a new definition can be more comprehensive and thus more useful.

Estimates of the number and characteristics of students at risk of educational failure are critical for improving the allocation of educational and social resources among and within states, and for developing more effectively targeted policies and programs. Most programs directed towards at-risk populations use a single variable to allocate program resources, such as family income levels or participation in school lunch. Such definitions do not include several important aspects of risk, such as the effects of multiple risk; the resiliency factors; and the identification of the source of risk, as well as programs and policies effective against particular types of risks. For example, previous analyses at Rand and elsewhere have shown that children who score poorly on achievement tests are disproportionately at multiple risk, and single measures of risk miss large segments of at-risk students, and include students not at risk of educational failure.

Status of Study and Products: The project is in the early part of its second year. It has produced its first progress report. Reports on each of the three objectives will be issued, with the first due in mid-1998.

OERI Contact: Jerome E. Lord, 202–219–2242

Title of Study: "Scaling Up:" Effects of Major National Restructuring Models in Diverse Communities of Students At Risk (Project 5.2)

Principal Investigator(s): Sam Stringfield and Amanda Datnow, Johns Hopkins University, MD; Steven Ross and Lana Smith, Memphis State University, TN

Program: CREDE Program 5: Integrated Reform

Funding Level: $547,864. Year 1 $112,448; Year 2 $102,114; Year 3 $83,723; Year 4 $116,191; Year 5 $133,390

Project Period: 7/1/96–6/30/01

Project Design: This study uses a number of different quantitative and qualitative methods to examine the processes and outcomes of various school reform methods. It is designed to address the questions:

- How effective can current school restructuring proposals be in improving student achievement in schools serving language minority students in multicultural contexts?
- Are some proposals better suited to certain contexts than others?
- What actions at the federal, state, local school district, and school levels increase (or decrease) the probability of obtaining full benefits from any or all such proposals?

Over a 4-year period, the study will follow 13 restructuring elementary schools, each of which is using 1 of 5 designs: the Audrey Cohen model, Modern Red Schoolhouse, Coalition for Essential Schools, Comer School Development, and Success for All. Through direct observation, collection and analysis of data, and interviews, the researchers are gathering information on impacts the programs are having on the students, families, and schools.

Educational Significance of the Study: The current momentum to implement a variety of school reform models throughout the nation is based largely on purposefulness and an intrepid spirit. There is little research to show that such models actually work. The purpose of this study is to do just that—try to understand far better than we do now the variety of positive and negative effects a variety of school reform models have on students and schools. Reform in a large variety of partial and whole models is in our future: we need to find out as soon as we can what works, and hopefully, begin to get a better of idea of why and why not, so that school reforms will be focused and effective.

Status of Study and Products: First year data on all students and schools have been collected, permissions received, and implementation steps taken. Reports on theoretical and practical aspects of the implementation of school reform designs are due starting in summer 1998, and a progress report has been received. Periodic reports over the 4 years are planned.

OERI Contact: Jerome E. Lord, 202–219–2242

Title of Study: Untracking: Evaluating the Effectiveness of an Upscaled Educational Innovation (Project 5.3)

Principal Investigator(s): Hugh Mehan and Lea Hubbard, University of California, San Diego, CA

Program: CREDE Program 5: Integrated Reform

Funding Level: $526,889. Year 1 $119,381; Year 2 $126,429; Year 3 $135,622; Year 4 $145,457

Project Period: 7/1/96–6/30/01

Project Design: This project evaluates the effectiveness of the implementation of an educational innovation. The Achievement Via Individual Determination (AVID) program "untracks" low-achieving ethnic and language-minority high school students by exposing them to a college-prep curriculum augmented by a system of teachers, tutors, counselors, and out-of-school personnel who provide direct help. This program has already been successful in preparing such students from San Diego for college—college attendance by African-American and Hispanic students is above the national average.

The program's adoption by other school districts provides the opportunity to study its implementation from the start. This 4-year study is tracking the implementation of programs in 7 California, Kentucky, and Virginia schools. It asks these implementation questions:

- How effective is AVID center's strategy for exporting program standards, staff development, site teams, tutorials?
- Does AVID center provide appropriate support for producing strong student outcomes?
- What prior knowledge of AVID's strategies and goals do receiving staff have?
- What actions are Regional Directors taking to implement the plan?
- Are program elements being implemented or modified? If modified, how do the modifications affect program success?

The collection of data will also provide information on the academic performance of "untracked" students and will compare their performance with local and national norms and with students in control settings. While implementation is important, the emphasis is also on collecting data, interviewing students, families, teachers and members of the community, and understanding institutional and other processes that contribute to or inhibit academic success.

Educational Significance of the Study: The AVID program's initial successes have encouraged school districts around the United States to imitate the San Diego success in particular. Any educational innovation that has enjoyed some very visible and unarguable success needs to be looked at more closely to determine whether it is in fact generalizable to other situations and contexts. This study is sufficiently long and intensive to provide a great deal of information that will not only show the strengths and weaknesses of various AVID implementations, but also show us whether AVID is replicable and useful in many other contexts.

Status of Study and Products: The first progress report has been received. Intensive field research is already underway at all three sites. Periodic technical reports and progress reports are expected, and a final report is expected in late 2000.

OERI Contact: Jerome E. Lord, 202–219–2242

Title of Study: Improving Classroom Instruction and Student Learning for Resilient and Nonresilient English Language Learners (Project 5.4)

Principal Investigator(s): Yolanda Padron, Shwu-yong Huang, and Hersholt Waxman, University of Houston, TX

Program: CREDE Program 5: Integrated Reform

Funding Level: $500,379. Year 1 $66,588; Year 2 $94,749; Year 3 $112,414; Year 4 $108,748; Year 5 $117,880

Project Period: 7/1/96–6/30/01

Project Design: This study focuses on Latino English-language learners who have been classified as at risk of failure, but have done well. The research questions include:

- Why have some Latinos been successful in school despite having backgrounds similar to those of less-successful classmates?
- What variables, such as personal attributes, school and classroom factors, family and out-of-school factors, affect academic success?
- What instructional interventions can improve the academic success of Latino English-language learners?

The study compares learners who seem resilient and those who do not seem resilient in order to develop an instructional intervention that might improve their resilience. A pilot study involving 528 4th- and 5th-graders includes observations of over 100 of those students and 21 of their teachers. It also includes structured interviews with 30 resilient and 30 nonresilient students in the sample (as determined by strong indicators of nonresiliency from the results of an analysis.)

Educational Significance of the Study. The designation of students as "at risk for failure" is based upon one or two characteristics that are principally economic. Yet among those who are very disadvantaged, and thus automatically classified as at risk, there are students who strive and succeed despite the odds. Why? What have they got going for them that is not yet identified as a compensating factor or set of factors that make them either much less at risk or no risk at all? This study taps into several unknowns and tries to uncover some of the sources of strength, some of the assets that school reform models must take into account in planning their instructional strategies.

Status of Study and Products: The preliminary data have been collected and analyzed, but are not yet available. Periodic progress and technical reports are planned, and a final report is due in early 2001.

OERI Contact: Jerome E. Lord, 202–219–2242

Title of Study: Appalachian Children's Academic and Social Development at Home and in Nongraded Primary Schools: Model Programs for Children of Poverty (Project 5.5)

Principal Investigator(s): Ellen McIntyre, Diane Kyle, and Ric Hovda, University of Louisville, KY

Program: CREDE Program 5: Integrated Reform

Funding Level: $587,445. Year 1 $129,332; Year 2 $125,858; Year 3 $132,150; Year 4 $138,758; Year 5 $61,347

Project Period: 7/1/96–6/30/01

Project Design: The two principal avenues of inquiry in this study, designed to assess the effects of specific interventions on the academic and social development of urban and rural children of poverty, are:

- What are the effects of a child-centered nongraded primary program on urban and rural children of poverty in terms of academic and social development?
- In what ways are the teachers who are considered "high implementers" of this model responsive to the particular cultural and linguistic knowledge and needs of this population?

Eight teachers in four school districts are collaborating with researchers by assisting with data gathering, analysis, and dissemination. Researchers and teachers annually assess children's development through a variety of standardized tests, interviews, and observations. They conduct regular home visits with the 38 families involved in the study and conduct community studies. Observations of instruction and interviews with teachers across the 4 years will provide a context for understanding the students' social and academic development and to understand the influence of the curricular and instructional decisions being made.

Educational Significance of the Study: The ungraded primary classroom is still an experimental form of instruction and social organization because so little is known about its efficacy from regular and consistent research attention. This study changes all that. The researchers are studying the classrooms for 4 years in order to learn what it is within that environment that induces or inhibits the students' development both socially and academically. The information from this study will unveil some more of the mystery as to why and how ungraded primary classrooms can be seen as a welcome experiment when dealing with children of poverty, an experiment that may well prove generalizable in one or many of its elements to other sites.

Status of Study and Products: Preliminary data collection and tests have been completed, and preliminary findings are being reported in the first progress report. Annual progress and occasional technical reports are expected. A final report is due in late 2000 or early 2001.

OERI Contact: Jerome E. Lord, 202–219–2242

Title of Study: The Sociocultural Context of Hawaiian Language Revival and Learning (Project 5.6)

Principal Investigator(s): Lois Yamauchi, University of Hawaii, HI

Program: CREDE Program 5: Integrated Reform

Funding Level: $259,592. Year 1 $56,285; Year 2 $53,720; Year 3 $55,694; Year 4 $49,444; Year 5 $44,449

Project Period: 7/1/96–6/30/01

Project Design: The majority of Native American languages (American Indian, Alaska Native, and Native Hawaiian) are disappearing from usage. For a variety of historical reasons—including the English-only policy of schools serving Natives—an entire generation of Native youth were taught to regard their language with shame. Thus as parents, they did not teach their children the language. In recent years Native Americans have sought to reverse this trend.

One important initiative is the use of the school as a vehicle for Native language revival. Aided by federal policy intended to promote and protect Native languages (such as the Native American Languages Act of 1990), Native Americans are developing programs to cover a broad spectrum of needs. The most ambitious of these programs is that of total language immersion. Papahana Kaiapuni (the Hawaiian Native Language Program serving grades K–12) was initiated in 1987 and is perhaps the oldest of these programs.

The program exists at various sites on the Hawaiian islands and its students receive academic instruction entirely in Hawaiian until grade five. Thereafter, English is gradually introduced as a second language. Hawaiian remains the primary language of instruction, although English is increased at the secondary level, particularly for subjects such as mathematics and science. A key requirement of the program is the collaboration from the families involved—from studying and using Hawaiian with their children to ongoing involvement with school projects.

This project is studying students in Papahana Kaiapuni to attempt to determine how this increased language experience:

- Relates to identification as a Hawaiian Native; and
- Relates to increased success in school.

This study is following 45 elementary-level Hawaiian language students both in and out of school. The students agree to keep a journal, complete a survey, and to be observed and interviewed. The researcher is studying how Hawaiian is used (for example, whether Hawaiian is preferred for certain topics, for emphasizing authority, identity, or emotional needs) in different settings such as family and peers. This will provide important clues as to how useful youth view Hawaiian outside the school setting.

Educational Significance of the Study: An extensive study of Native language immersion programs has not been conducted. This study will address tribal communities' needs for information and documentation on key features of an established immersion program, as well as usage patterns and benefits of immersion instruction to academic achievement. The study will also contribute toward the broader goal of cultural preservation: the maintenance of a Native language is inescapably tied to the life of the culture in which it exists, since key ideas, beliefs and cultural enactments are conveyed only through that language. The goal of cultural preservation will also be enhanced through analyzing of the process of community commitment to intergenerational language transmission. Finally, although the study is limited to Native Hawaiians, the findings will expand the knowledge base concerning dual language instruction for any ethnic/racial group.

Status of Study and Products: A review of the research on language immersion programs and on Papahana Kaiapuni has been completed. This review serves as the basis for understanding tribal communities needs, key features and issues. The annual report indicates that the study of language students has begun and is making good progress. A definitive report will be issued at the end of the study.

OERI Contact: Karen Suagee, 202–219–2244

Title of Study: School/Community Co-Constructed School Reform: Upscaling from Research to Practice in a Native American Community (Project 5.7)

Principal Investigator(s): Roland Tharp, University of California, Santa Cruz, CA

Program: CREDE Program 5: Integrated Reform

Funding Level: $1,167,306. Year 1 $232,774; Year 2 $251,198; Year 3 $239,795; Year 4 $228,804; Year 5 $214,735

Project Period: 7/1/96–6/30/1

Project Design: In recent years, American Indian tribes have exerted greater control over the education of their children. A particular focus of tribal reform efforts has been to ensure culturally compatible and effective instruction of American Indian youth. Since the majority of their teachers are non-Native, a growing number of tribes have adopted broad efforts at the classroom level. These efforts have emphasized community involvement in the design of culturally-sensitive teacher professional development activities.

This project studies the implementation and effects of district-wide reform in the Pueblo of Zuni. It focuses on the following research questions:

- What is the role of key actors—such as teachers, administrators, parents and local leaders—in the process of reform?
- How do teachers implement the principles of effective American Indian education (as refined by this study)? What is the impact of these new teacher practices on students' success?

The study provides ongoing assistance to teachers in the Zuni middle school as they implement the prescribed principles in their classrooms. Parents participate in structured group dialog (focus groups) with teachers and administrators to help guide culturally-compatible reform activities. Parents also provide input into lesson plans.

The study is gathering a variety of information such as: teachers' documentation on their experiences, observations of teachers in the classrooms, observations of parent/teacher interactions, and student academic information. In addition, the researchers are conducting surveys of parent, teacher, and student attitudes toward cultural compatibility of education, the Zuni community, appropriate teaching, and whether the general principles fit as appropriate teaching.

Educational Significance of the Study: Schools serving American Indian students experience high non-Native teacher turnover. Much of this turnover has its roots in teachers' lack of knowledge of culturally-determined values, perceptions, and learning styles. The resulting inability of teachers to successfully engage their students in learning, particularly as they progress beyond the primary level, results in great frustration. Typically, professional development activities do a poor job of addressing this problem, and those that do are only cursory in nature.

This study takes a comprehensive approach by including the participation of those who are most knowledgeable of tribal culture—parents and local tribal leaders. Finally, although the setting is one particular tribe, this study is focused on producing general principles of culturally compatible and effective teaching across tribal groups.

Status of Study and Products: The annual performance report indicates that good progress is being made. A definitive report will be issued at the end of the project.

OERI Contact: Karen Suagee, 202–219–2244

Title of Study: Case Studies of Exemplary Native American Education Conducted in the Context of Native Language, Culture, and Community (Project 5.8)

Principal Investigator(s): William Demmert, Western Washington University, WA

Program: CREDE Program 5: Integrated Reform

Funding Level: $145,344. Year 1 $75,760; Year 2 $69,584

Project Period: 12/1/96–6/30/98

Project Design: Native Americans (American Indians, Alaska Natives and Native Hawaiians) are greatly concerned about retaining tribal languages and cultural traditions that underlie their Native identity. A particular concern is how schools can best support such efforts. In recent years a mix of programs has grown, and educators have found that there is much to learn within Native classrooms about culturally-responsive teaching and curriculum, classroom management, and specific approaches to Native language teaching. Yet little is known about the essential features of programs that have been successful.

In this 2-year study, the research attempts to fill this void and to address the evidence of effectiveness of these programs. Effectiveness may be addressed through such questions as:

- Does early and continuing exposure to two languages (Native and English) result in more flexibility, creativity, and academic achievement?
- Do schools incorporating Native language and culture have higher academic achievement levels than national averages for Native students?
- Does culturally relevant curriculum contribute to improved reading comprehension?

The researcher is reviewing the existing research on Native language and culture and assemble a group of prominent Native American educational researchers and practitioners. That group is identifying exemplary programs serving Native students that incorporate their language and cultural base to serve as case studies. The case studies are designed to assess program effectiveness and academic achievement is being measured by standardized test scores and grades.

Educational Significance of the Study: The recent growth of school-based programs focused on language and culture has spawned a great variety of practices. Findings from the survey of the research will be used to develop a set of principles and practices that any school may use for developing and refining its Native language and culture program. Findings from the case studies will have great significance toward advancing our knowledge of how language and culture-based programs contribute to the educational achievement and success of Native students.

Status of Study Products: The researcher has produced an annotated bibliography. A definitive report will be issued at the end of the study.

OERI Contact: Karen Suagee, 202–219–2244

Title of Study: Assessment (CREDE Program 6)

Program Investigator(s): Roland Tharp, University of California, Santa Cruz, CA

Program: National Educational Research and Development Centers: Center for Research on Education,Diversity, and Excellence (CREDE)

Funding Level: $530,136. Year 1 $62,847; Year 2 $121,149; Year 3 $240,016; Year 4 $84,124

Project Period: 7/1/96–6/30/00

Project Design: There is general agreement that effective education for limited-English proficient (LEP) students, as for all students, must build on the cognitive, linguistic, and social skills they bring to school. Assessments in the contexts of programs for these students are complex, because their language and culture are such critical elements—both as existing resources to be developed and as bases for extending LEP students' repertoire of skills and knowledge. Drawing on research-based knowledge and professional experience, educators have devised a number of program and student assessment alternatives to respond to language and culture differences in populations.

While individual program evaluations abound, and several large-scale studies have attempted to compare program types, researchers have had to turn to other forms of investigations to move forward. Researchers must investigate current practices in terms of the populations they serve and the ways they facilitate the transition and integration of those populations into the full range of curricular options available to students from English-speaking backgrounds. The Assessment Program addresses key evaluation issues in the assessment of language minority students and exceptional linguistically and culturally diverse students in order to ultimately make recommendations on practices and polices that schools must adopt if they are to accurately and reliably gauge student progress in learning English and core content.

Educational Significance of the Study: Gauges of the educational effectiveness of programs for LEP students—whether full program or supplements to instruction—depend on the administration of reliable and valid instruments and strategies. They depend on innovative strategies for the assessment of single students, as well as groups of similar students. The utility of the results of assessments depends on the interpretation of the results—interpretations that guide educators to manage classroom instruction that is appropriate to the students and also motivates them to learn to higher standards. These studies promise to provide basic information on the assessment of LEP students in relation to the program services they are receiving.

OERI Contact: Gilbert N. Garcia, 202–219–2144

Title of Study: Assessment of Language Minority Students (Project 6.1)

Principal Investigator(s): Lorrie A. Shepard, University of Colorado, Boulder, CO

Program: CREDE Program 6: Assessment

Funding Level: $198,171. Year 1 $62,847; Year 2 $54,450; Year 3 $78,874

Project Period: 7/1/97–6/30/99

Project Design: Recent research (Hart & Ripley, 1995) on comparing the language enrichment experienced by children at different SES levels found extreme differences between highly advantaged and less advantaged households. The research also found very strong correlations between their measure of cognitive development (IQ) and language enrichment in the home. The study made a profound case for the influence of SES, as mediated through language enrichment, on the development of cognitive skills related to schooling.

This project is evaluating the validity of new performance assessments being administered statewide in Rhode Island in grades 4, 8, and 10. It is suspected that comparisons of student performance these and other assessments from various SES/parent education levels and cultural backgrounds will also reveal significant differences between groups. Accordingly, the study is addressing the following questions:

- How should a performance continuum be conceptualized, with what benchmarks of increasing proficiency?
- What logistical problems or adaptation needs must be addressed to make it feasible to assess language minority students?
- Do assessments with adaptation enure valid and fair demonstrations of learning for language minority students?
- What are the instructional implications of assessment use?

The accuracy of the Rhode Island Performance Assessment in mathematics is being examined by comparing assessment results to independent criterion measures, including teachers' ratings of mathematics achievement, samples of classroom assignments, and exams and the results of the state administered Metropolitan Achievement Test. This project includes both a large-scale component involving data for all students in the state and a small scale pilot component involving 443 elementary and middle school-aged students of Mexican descent and English language learners (141 are Language Minority students) in 20 4th-grade classrooms.

The theoretical approach to this investigation considers sociocultural influences an important factor in the development of cognitive skills related to school success. Therefore, the researchers are collecting demographic data on the family backgrounds of students in the target population. Correlation and regression analyses are the primary methods used to examine the relationship between students scores on the Rhode Island Performance Assessment and each of the following criterion measures: the Metropolitan Achievement Test, teacher ratings and grades, and independently scored classroom assignments and exams.

Educational Significance of the Study: A special focus of this project is the relative validity of the assessments for native speakers of English versus ESL students. The background information collected for the preliminary stage of this research project reveals the very low SES status of our target population and provides evidence that sociocultural influences are at play in the cognitive and academic performance of these students.

The overall purpose of this project is to make advances in the integration of sociocultural theory into cognitive assessment practices in schools for diverse student populations. Demographic data on the family backgrounds of students in the target population will be useful in determining the most appropriate method for devising normative data for the interpretive process connected to cognitive evaluations. The results will contribute to the development of alternative cognitive assessments and strategies for use by school officials that will integrate sociocultural influences into the interpretation of cognitive assessment test results.

Status of Study and Products: Regular performance reports, materials, and technical reports indicate that good progress if being made in this project, as noted in the interim reports prepared for the Center's most recent retreats and the descriptions of the projects that follow. A Practitioner Report, *Preliminary Data on a Socioculturally-Based Alternative Assessment of Cognitive Competence for Schooling* is in progress.

OERI Contact: Gilbert N. Garcia, 202–219–2144

Title of Study: Alternative Assessment for Exceptional Linguistically and Culturally Diverse Students (Project 6.2)

Principal Investigator(s): Sybil Kline, University of California, Santa Cruz, CA

Program: CREDE Program 6: Assessment

Funding Level: $331,965. Year 1 $86,699; Year 2 $161,142; Year 3 $84,124

Project Period: 7/1/97–6/30/00

Project Design: This project is producing a literature review, survey results, and critical analysis of the appropriateness of existing special education assessment and eligibility practices for limited-English-proficient (LEP) children with learning disabilities (LEP/LD). It is addressing the following fundamental assessment questions:

- What is the relationship between cognitive processing measured by an alternative assessment based on the cultural-historical theory of cognitive development, and other standard measures of literacy and language proficiency?
- Do test results show evidence of sociocultural influences on the development of cognitive, literacy, and language proficiency skills?
- Do test results show evidence of developmental changes in cognitive processing with increasing ages of school children?

The researcher is conducting a literature review, conducting surveys in seven states with high populations of students who are of Mexican descent, and evaluating alternative assessment instruments. The literature review examines the theoretical/conceptual background for existing special education policies and practices, and the surveys examine current policies and practices. In seven states with a high population of target students—California, Oregon, Washington, Arizona, New Mexico, Colorado, and Texas—the researcher is surveying practitioners and state departments of education on current policies, practices, and procedures for the alternative assessment of LEP/LD students.

In two California schools with bilingual education programs, the researcher is collecting actual test data. The student body of the two schools are predominantly English language learners of Mexican-descent and test data are being collected on two classes at the first-, fourth- and eighth-grade levels. The researcher has authored an instrument, based on the cultural-historic theory of cognitive development and designed to measure the cognitive processes of Planning, paying Attention, Sequential thinking, and Simultaneous thinking, and also measure the Speed of processing (PASS+S). This portion of the study assesses the relationship between the cognitive processes measured by the PASS+S Dynamic Assessment and two other alternative assessments—the Read-Rewrite measure of literacy and the Bilingual BICS/CALPS measure of language proficiency.

Educational Significance of the Study: This project focuses on a very important issue in the field of special education. The researchers are reviewing a variety of assessment instruments, the interpretation of test results, and the placement decisionmaking process for LEP/LD special education students. Information that had not previously been readily available about policies and practices in states with a high population of target students is being collected.

Status of Study and Products: Regular performance reports, materials, and technical reports indicate that good progress if being made in this program. A manuscript on the topic of alternative assessment that will include the literature review is planned in the form of a Practitioner Report. A report covering the survey results and a critical analysis of the appropriateness of these policies and practices for the target population will be prepared for publication and national dissemination.

The Principal Investigator also made progress in the area of product development and availability. The Principal Investigator has authored an alternative assessment, the PASS+S Dynamic Assessment, which is based on the cultural-historical theory of cognitive development. An information pamphlet on this test kit was prepared and progress has been made on a manuscript to be submitted for journal publication on the preliminary data collected on the PASS+S. Negotiations were started with a publisher (CTB-McGraw Hill) for the assessment product to be published.

OERI Contact: Gilbert N. Garcia, 202–219–2144

Center for Research on the Education of Students Placed At Risk (CRESPAR)

Title of Project: Center for Research on the Education of Students Placed At Risk (CRESPAR)—Center Overview

Principal Investigator(s): Robert Slavin, Johns Hopkins University, Baltimore, MD; and
A. Wade Boykin, Howard University, Washington, DC

Program: National Educational Research and Development Centers

Funding Level: $26,700,000. Year 1 $4,700,000; Year 2 $5,000,000; Year 3 $5,000,000
Year 4; Year $6,000,000; Year 5 $6,000,000

Project Period: 10/1/94–9/30/99

Center Mission and Focus: The mission of the Center for Research on the Education of Students Placed At Risk (CRESPAR) is to conduct the research, development, evaluation, and dissemination needed to transform schooling for students placed at risk. The work of the Center is guided by three central themes—ensuring the success of all students at key development points, building on students' personal and cultural assets, and scaling up effective programs. The work is conducted through seven research and development programs and a program of institutional activities which includes administration and the dissemination of Center reports and products.

The seven research and development programs are:

1. Resilience and cultural integrity;
2. Early education and development;
3. School and classroom interventions in elementary schools;
4. School and classroom interventions in middle and high schools;
5. Language minority studies;
6. School, family, and community partnerships; and
7. Systemic and policy-related studies.

Educational Significance of Center Work: Students may be at risk of educational failure for many reasons. Major concerns of the At-Risk Institute and CRESPAR are poverty, racial and ethnic minority status, and limited-English proficiency. Improving the education and school performance of such students is essential to their present and future well-being and to developing the full potential of the nation's citizens. The research and development program of CRESPAR aims to help fill this need.

CRESPAR is developing new and more effective school and classroom interventions to assist such students who are at risk of educational failure. CRESPAR is also studying such innovations as well as other issues including how to make students' transitions between levels of schooling smoother, how to build on the cultural assets of students from minority backgrounds, and how to scale up effective programs so they can be used successfully by many others. These are key issues in providing a more useful education for at-risk students.

OERI Contact: Ron Pedone, 202–219–2247

Title of Study: Resilience and Cultural Integrity (CRESPAR Program 1)

Principal Investigator(s): A. Wade Boykin, Howard University, Washington, DC; and
Saundra Nettles, University of Maryland, College Park, MD

Program: Center for Research on the Education of Students Placed At Risk (CRESPAR)

Funding Level: $2,023,249. Year 1 $409,356; Year 2 343,141; Year 3 $371,726;
Year 4 $449,513; Year 5 $449,513

Project Period: 10/1/94–11/30/99

Position Design: Resilience refers to how the individual responds to risk and is usually conceptualized in one of three ways: (1) overcoming the odds; (2) sustaining competence in the presence of acute or chronic life stressors; or (3) recovering from trauma. Cultural integrity is defined as the distinctive prevailing themes available in the individual's close environment that can be used for organizing reality, for guiding behavior and core values, and for structuring typical contexts in which students exercise their competencies. These themes make understandable the many factors that place students at risk because of problematic life circumstances. This implies that ethnic minority children from low-income backgrounds are not simply defined by inadequacies and deficiencies; there is complexity, meaning, and coherence contained in their experiences that can be interpreted in adaptive and cultural terms. Their pertinent experiences and psychological manifestations can be understood on their own terms as these populations strive to make sense of their lives.

This program addresses research on the individual cognitive and emotional characteristics of students. It includes a study of resilience in African-American children as they proceed through key transitions from elementary to middle and middle to high school, and a study of the role of cultural factors in cognitive functioning among African-American students. The first, Lessons from Resilient Children and Youth, consists of longitudinal studies that identify resilient children and analyze the protective mechanisms in their schools, families, and communities that help foster their resilience. One component of this study, Exposure to Violence and School Functioning of African-American Children, studies the impact of exposure to violence in the community, at school, and at home on the social, emotional, and cognitive development of elementary age children. Another, Student Life in High Schools, is a longitudinal study of students in three diverse urban high schools from 8th grade through 12th grade. Yet another component analyzes national longitudinal data to examine how adolescents' participation in out-of-school activities, including community activities, through middle and high school enhance their investments in personal and educational growth.

The second study of this program, Cultural Factors in Cognitive Performance and Classroom Settings, examines classroom instructional practices and classroom contexts that emphasize the cultural integrity of low-income African-American schoolchildren. In the first component of the Cultural Factors studies, researchers are conducting experimental studies of the relationships among culture, context, and cognition, to develop contexts for learning and performance that are responsive to children's prevailing cultural experiences and thereby facilitate academic outcomes. Another component examines the current cultural dynamics that operate in schools that serve low-income African-American children.

Educational Significance of the Study: This research program is intended in part to extend our knowledge of individual, ecological, and cultural barriers to learning as well as the factors and mechanisms that foster the resilience to overcome these barriers. Studies also examine instructional formats and classroom contexts which can potentially capitalize on the experiences and competencies that students bring to school with them. Other studies will identify potentially resilient children who are growing up in stressful environments and who are exposed to high levels of community and domestic violence, but who still appear to be developing in healthy, competent ways. Information gathered will provide a base of knowledge with which to guide the development of a policy agenda at the high school level. Findings from this work will focus on the impact of and potential for reform. The Fostering Student Investment study will provide knowledge on the ways that social relationships among youths and adults in communities contribute to the development of young adolescents, and yield new knowledge on adult-adolescent relationships in diverse environments.

The second major study will inform both curriculum and instructional applications by using multiple methods to examine prevailing classroom ecologies for African-American children. The study will also examine the connections between home and school practices, to investigate how these children serve as bridges between these two ecologies. While examining the current dynamics that operate in schools that serve low-income African-American children, these studies will provide information about the routines, practices, and frames of reference that characterize the classroom experiences of underserved populations. This will provide a knowledge base for optimal implementation of educational reforms.

OERI Contact: Sandra Steed, 202–219–2197

Title of Study: Exposure to Violence and School Functioning of African-American Children: Lessons from Resilient Children (Project 1.1a)

Principal Investigator(s): Hope Hill, Howard University, Washington, DC; and
Saundra Nettles, University of Maryland, College Park, MD

Program: CRESPAR Program 1: Resilience and Cultural Integrity

Funding Level: $603,760. Year 1 $121,857; Year 2 $156,425; Year 3 $95,876;
Year 4 $114,801; Year 5 $114,801

Project Period: 10/1/94–9/30/99

Project Design: Resilience refers to the ability to cope with risks within the person and their environments. This project studies the impact of violence and other adverse circumstances on the development of African-American children and the factors that promote emotional, social, and cognitive resiliency. It addresses the following research question:

- How does repeatedly witnessing violence in the street or growing up in neighborhoods where unpredictable acts of violence are commonplace affect children's functioning in school?

Researchers are examining differences within two predominantly African-American schools that differ in level of community violence. Both schools are located in the southeast area of Washington, DC. A sample of 175 children in third grade, randomly selected, in each school are being followed through elementary school.

In each of the two schools, 45 students have been selected to participate in more extensive studies. This aspect of the study is using structured interviews of these students, their parents and teachers, and selected community persons, such as ministers, recreation leaders, and tutors. The study includes math and reading tests scores and teacher descriptions of the focal child's behavior, social relations in the classroom, and attitudes toward competence. The study also addresses investments of children (protective mechanisms that contribute to resilience), as viewed by community persons, teachers, and parents.

Educational Significance of the Study: If schools are to effectively intervene in the lives of children in high risk situations, a solid data base is needed to inform how exposure to community violence affects basic child development and specifically, the social, emotional, and cognitive skills critical for school success. Through the study of children who have witnessed violence, effective means to engage these youngsters in the learning process can be developed. This study investigates the impact of exposure to violence on specific areas of school functioning and recommend effective means of intervention in the school for affected children.

Status of Study and Products: A profile of resilience among urban African-American children exposed to community violence has been constructed and an instrument to assess the types and level of community resources is being developed. A final report is expected in November of 1999.

OERI Contact: Sandra Steed, 202–219–2197

Title of Study: Student Life in High Schools: A Longitudinal Study (Project 1.1b)

Principal Investigator(s): Melissa Roderick, University of Chicago, IL

Program: CRESPAR Program 1: Resilience and Cultural Integrity

Funding Level: $340,346. Year 1 $65,000; Year 2 $68,166; Year 3 $68,166;
Year 4 $69,507; Year 5 $69,507

Project Period: 10/1/94–9/30/99

Project Design: Prior studies of transitions into high school have primarily focused on measuring changes in school performance and attitudes. The research demonstrates the importance of the high school transition, but it does not explain how or why students' experiences produce such disparate changes in performance. This study addresses the issue by investigating the question:

- Would social and academic intervention during school transition lead to improved school attendance, higher student grades, and lower dropout rates? If so, what factors should be considered by school personnel as they choose among specific options?

The project traces students' experiences and development, identify the set of peer, academic and environmental influences that shape perceptions and behavior, and link these experiences to student outcomes over the 4-year period.

The study is working in conjunction with the Classroom Effects Study in the Consortium for Chicago Public School Research to conduct a longitudinal study of 120 students—30 students in each of four high schools—from the 8th through 12th grades. Some of the students are in intervention programs, such as ninth-grade academies and summer school programs, while others are not. Interviews are being conducted with the students, their teachers, and their parents. The data collection process focuses on identifying the social and academic processes that contribute to student isolation, disengagement, and high rates of course failure. Differences in students' experiences are examined between students and across schools.

Educational Significance of the Study: This project will provide a base of knowledge to help guide the development of a policy agenda at the high school level in Chicago. The goal is to provide useful and objective analysis that does not endorse particular reform strategies or programs but provides empirical data and a broader conceptual and policy framework to be used by school personnel as they choose among specific policy options. For example, research on course failure patterns provided a base of analysis to motivate policy debate on the problems in Chicago high schools. New policies such as Chicago's implementation of ninth grade academies provide transitional programs that can reduce the extent of physical change and complexity of relationships students encounter and increase peer and teacher support.

Status of Study and Products: Reports on academic difficulty during the transition into high school and on truancy have been completed. A final report on the findings will be issued in 1999.

OERI Contact: Sandra Steed, 202–219–2197

Title of Study: Fostering Student Investments (Project 1.1c)

Principal Investigator(s): Saundra M. Nettles, University of Maryland, College Park, MD;
and Will Jordan, Johns Hopkins University, Baltimore, MD

Program: CRESPAR Program 1: Resilience and Cultural Integrity

Funding Level: $119,343. Year 1 $46,000; Year 2 $36,906; Year 3 $36,437

Project Period: 10/1/94–11/99

Project Design: Little attention has been paid to the positive role of the community as a protective mechanism that contributes to resilience. The impact of community members on adolescents depends in large part on the investments of time, energy, and other resources in pursuit of legitimate opportunities that will have a positive impact for the future.

Student investment is exploration, skill development, and credential acquisition that make more attainable a range of options for the future. Student investments fall into five categories that correspond to the developmental tasks of early adolescence: (1) health and physical well-being, (2) personal and social competence, (3) cognitive or creative competence, (4) vocational awareness and readiness, and (5) leadership and citizenship. Accordingly, the research questions upon which this project is based are:

- To what extent do community members help students make and carry out educational, personal, and career decisions?
- What kind of community support is available to students in their middle and high school years?
- Do transitions from one level of schooling to another affect patterns of support?

Researchers are conducting secondary analysis of a large national data base, the National Educational Longitudinal Study (NELS:88) to describe changes over time in levels of student investments and sources for students in the community and schools. In addition, they are using the Perceptions of Violence Scale—a series of items that measure the child's perception of violence in the home, the school, and the neighborhood—to explore causal linkages between social support in the community and self-reported student investments. For example, students are asked to report their conversations with teachers, counselors, or other adults separately on eight different issues related to their academic and nonacademic behaviors.

Follow-up questionnaires add information on use of time spent with peers and characteristics of the peer group, as well as information on personal use of alcohol or other drugs, participation rates in religious services, hours spent in care of family members or individuals, and relationships with parents or adult surrogates. The community is being viewed by assessing the child's view of the environment as caring or threatening and then by identifying protective factors within the child. In this way, the inner strengths that children bring with them to school will give a more accurate picture of the stress in their lives.

Educational Significance of the Study: The findings will inform educational research and practice about the educational role of communities. The study will provide knowledge on the ways that social relationships among youths and adults in communities contribute to the development of young adolescents, and yield new knowledge on adult-adolescent relationships in diverse environments.

Status of Study and Products: A report has been presented on *How Students Use Their Out-of School Time: Effects on School and Social Learning*. Another report is in preparation on *Community, School and Faculty Conditions That Influence Student Investment Behaviors*. A final report on *Meaning as a Mediator of Student Investments* will be disseminated in 1999.

OERI Contact: Sandra Steed, 202–219–2197

Title of Study: Experimental Research on the Role of Cultural Factors in School-Relevant Cognitive Functioning (Project 1.2a)

Principal Investigator(s): A. Wade Boykin, Howard University, Washington, DC

Program: CRESPAR Program 1: Resilience and Cultural Integrity

Funding Level: $510,142. Year 1 $83,233; Year 2 $57,231; Year 3 $80,460; Year 4 $144,609; Year 5 $144,609

Project Period: 10/1/94–11/99

Project Design: This study consists of experimental studies of the relationships among culture, context, and cognition. Specifically, researchers are examining the role of Afro-cultural ethos for low-income African-American grade-school children. Cultural resources examined for their effects on student learning and development in classrooms include: (1) expression through movement combined with music; (2) communalism, where students work collaboratively for the good of the group; and (3) increasingly dense and variable physical stimulation in the context of task presentation. The project addresses four basic questions:

- What are the ranges of conditions where children's performance is enhanced?
- Are there individual and group differences? How is prior socialization tied to such effects?
- What are the underlying psychological factors that help to explain enhanced performance?

The findings will be used to develop contexts for learning and performance that are responsive to children's prevailing cultural experiences and thereby facilitate academic outcomes.

Researchers are building upon previous work with a set of experimental investigations that have several objectives: (1) establish that the results of a previous study can be generalized to other students in other schools; (2) examine in more detail childrens' motives and emotions that are related to the effects obtained in the previous study; (3) examine the mediating role of cultural orientations and individual differences; and (4) examine home environmental factors that may give rise to Afro-cultural experiences and inclinations.

Three concurrent, but separate, studies are being conducted on effects linked to: music-accompanied movement; communalism; and physical stimulation. The researchers are studying low-income African-American grade-school children inner city schools throughout the United States, and low-income Euro-American children are included in the studies for comparison purposes. All investigations rely on randomization to ensure that students do not vary systematically on variables other than the factors included in the experimental designs. The sample of students for a representative study on music-accompanied movement consists of 128 2nd-graders; a representative study on communalism includes 124 2nd- and 4th-graders; and 60 3rd-graders are participating in a study on physical stimulation that is studying the soundness of relevant questionnaires.

In the first 3 years, investigations include laboratory experiments where the researchers measure childrens' retention of material presented in the context of music-accompanied movement. For example, prose recall of literary and scientific material is being examined—different types of music and ways of presenting music are used; movement and music themes in the story content are examined; intentional and incidental recall are compared; and performance is decomposed into separate aspects of information processing, such as encoding and inferencing. Work focuses on examining communal factors in peer tutoring and communal work groups to discern the effects on such outcomes as text recall, creative problem solving, and metacognitive performance.

Individual differences such as gender, grade level, expressions of positive and problem behaviors in school, motivation and interest level, and achievement level are also examined. Questionnaires are administered and open-ended interviews are conducted to supplement insights gained from the data. In addition, structured interviews elicit feedback from the students in order to examine the psychological processes undergirding the acquisition and expression of cultural themes in the childrens' experiences.

Based on their findings during the first 3 years of the study, in years 4 and 5 the researchers will develop and conduct field tests of new classroom learning activities using Afro-cultural contexts. Concurrently, the researchers will examine the soundness of the cultural orientation and context measures by discerning the reliability and validity of the instruments.

Educational Significance of the Study: Findings obtained thus far reveal that second-grade African-American children show enhanced recall from orally presented stories when, through the story presentation, children are provided opportunities and encouragement to engage in music-linked movement. This enhancement effect has been shown to hold true for recall of factual information and higher-order recall of relationships among story concepts. Recall has also been enhanced when story content contains greater references to high-movement rather than low-movement activity. Similarly, creative problem solving, text recall, and metacognitive performance have been enhanced when elementary school level Black children work communally in groups of two or three, as opposed to individually. These findings suggest that classroom instruction which incorporates the above cultural factors will help African-American students to achieve at higher levels.

Status of Study and Products: A final report on cultural factors in school-relevant cognitive functioning will be produced and disseminated in 1999.

OERI Contact: Sandra Steed, 202–219–2197

Title of Study: Classroom Cultural Ecology (Project 1.2b)

Principal Investigator(s): A. Wade Boykin and Constance Ellison, Howard University, Washington, DC

Program: CRESPAR Program 1: Resilience and Cultural Integrity

Funding Level: $532,489. Year 1 $79,615; Year 2 $84,485; Year 3 $90,787; Year 4 $138,801; Year 5 $138,801

Project Period: 10/1/94–9/30/99

Project Design: This study is designed to provide descriptive data on the practices, procedures, and dynamics that comprise the typical classroom life in schools serving low-income African-American elementary school children in grades one through six in Washington, DC and Prince Georges County, Maryland. The primary research questions are:

- What social and psychological behaviors do these children and their teachers typically display?
- What is the "technical core of instruction" (specific learning activities) upon which achievement is predicated?
- How are classrooms physically organized and what are the rules and regulations that structure daily classroom life?
- What are the typical forms of discipline and classroom management that teachers employ and how do students react to them?
- What are the perceptions and attitudes of classroom life held by these students and their teachers?

The interdisciplinary team of researchers for this study represents the fields of developmental psychology, educational psychology, school psychology, curriculum and instruction, cultural anthropology, educational administration, and program evaluation. The researchers are using questionnaires, interviews, classroom observations, audiotapes and videotapes of classroom sessions and focus groups. The analysis of observation protocols and transcripts from the field work seeks to determine patterns of behavior, activities, and attitudes including cultural and linguistic dynamics that interplay within the classroom.

Educational Significance of the Study: It is intended that the descriptive insights gained from this project will guide school improvement efforts in ways that penetrate to the core of classroom life. It is further intended that the insights gained from this project will be of value in helping other projects at CRESPAR fulfill their reform agendas. If the goal of American education is to ensure that all students are *placed at promise* and not *placed at risk*, educators must confront the real issues that operate on a daily basis in their classrooms. The understanding of potential "cultural clashes" can help in the formulation of professional development activities for teachers and administrators so that they can become more aware of, and responsive to, the cultural assets that African-American children bring to the classroom. This can lead to the development of educational practices and perspectives that can inform more culturally responsive pedagogy that will benefit both students placed at risk for educational failure and their teachers.

Status of Study and Products: A final report will be disseminated in 1999.

OERI Contact: Sandra Steed, 202–219–2197

Title of Study: Early Learning and Development (CRESPAR Program 2)

Principal Investigator(s): Barbara A. Wasik, Johns Hopkins University, Baltimore, MD

Program: Center for Research on the Education of Students Placed At Risk (CRESPAR)

Funding Level: $1,684,945. Year 1 $319,882; Year 2 $300,121; Year 3 $362,000; Year 4 $351,471; Year 5 $351,471

Project Period: 10/1/94–9/30/99

Project Design: The Early Learning and Development Program is working to increase our understanding of the knowledge, skills, and behaviors that children bring with them to kindergarten and first grade and the significance that teachers and parents attribute to different aspects of children's development. It is developing curriculum materials and classroom practices that increase children's skills development and be sensitive to the particular needs of children placed at risk. The Program is emphasizing children's language development and early literacy skills during the preschool years because of their importance to later school success. Its one continuing project involves developing a preschool early literacy curriculum that is research based.

Educational Significance of the Study: The first 5 years of a child's life set the stage for later development. It is during this time that language is learned, that qualitative changes in cognition occur, and that social and emotional characteristics of the child unfold. It is also a time when children are most vulnerable and are totally dependent on others for their well-being, support, and development. For many children, living in poverty, in homes where only one parent is present, and with parents who have little formal education places them at risk for school failure long before they enter school for the first time. The problems these children face cannot be totally ameliorated during the elementary school years. Instead, we must look for ways to better prepare these children for school and for a successful school beginning. We must also develop preschool and kindergarten programs that build on the strengths of these children and promote practices that have been shown to work well for disadvantaged children. Finally, we must develop programs that emphasize the critical components of development that are predictive of later school success. The Early Learning and Development Program is engaged in a research and development agenda that will help us to these ends.

Status of Study and Products: Regular performance reports, materials, and the technical reports indicate that good progress is being made in this program.

OERI Contact: Jerry West, 202–219–1574

Title of Study: Development and Evaluation of a Research-Based Early Literacy Program (Project 2.1)

Principal Investigator(s): Barbara A. Wasik, Johns Hopkins University, Baltimore, MD

Program: CRESPAR Program 2: Early Learning and Development

Funding Level: $736,835. Year 1 $159,576; Year 2 $139,786; Year 3 $146,395; Year 4 $145,539; Year 5 $145,539

Project Period: 10/1/94–9/30/99

Project Design: This study is focusing on children's language development and early literacy development during the preschool years. It is developing and evaluating a research-based preschool literacy curriculum for 3–5-year-old children. The study is designed to address the following research questions:

- How much could children placed at risk achieve if they had effective interventions from infancy through elementary school?
- What is the relative effectiveness and cost-effectiveness of early and school-age interventions in terms of ultimate success in school?

Researchers address these questions by examining the effects of continued intervention from early through elementary school in comparison to the effects of early intervention only, elementary school intervention only, or no intervention. The program being employed consists of developing and evaluating separate components with an emphasis on: (1) alphabet knowledge, (2) storybook reading, and (3) vocabulary development. The separate components are being coordinated into one early literacy program.

In each of these areas an extensive literature review is being conducted to determine what is known about these areas. The storybook reading review examines the effectiveness of this activity as well as the effects of particular practices. Four particular effects are highlighted: the use of small groups, rereading familiar stories, teacher interaction during story reading, and the use of explicit vocabulary instruction. In the area of alphabet knowledge, the research literature is being explored to see what it tells us about the effectiveness of different strategies for teaching the alphabet and how receptivity of different groups of children to these different practices. The vocabulary development review is examining whether the amount and quality of conversation in the classroom affects children's vocabulary development.

The literature reviews are used to guide the development of curriculum materials and practices. The curriculum helps children develop the cluster of skills and competencies which are collectively referred to as emergent literacy and are embedded in practices that routinely take place in preschools, such as story-book reading, circle time, and meal time. These materials and practices are then implemented and evaluated in preschool and kindergarten programs serving disadvantaged children. Based on the findings of the research that is conducted in conjunction with the trial implementation of the curriculum components, the materials and practices are revised, modified and reevaluated.

The Principal Investigators established a collaborative relationship with the Early Learning Center at Howard University. Together with the director of the Center, they worked on an experimental study of the effects of story retelling on children's language development and comprehension. Work to develop effective storybook reading practices is continuing at an elementary school in Washington, DC. Prior to the introduction of the storybook reading curriculum, children's vocabulary, print awareness, and writing ability were tested. Children were tested again after the intervention.

The researchers also developed and pilot-tested preliminary materials for an oral language and emergent literacy program for 3- and 4-year-olds at a Baltimore County school in Maryland. An experimental study of the effects of a 2-month intervention on 4-year-olds is underway.

Educational Significance of the Study: This study will help us to understand disadvantaged children's literacy and language development and how best to go about helping children to obtain the knowledge and skills they will need to be successful in school. Much of the knowledge and many of the skills targeted by this curriculum are strongly related to children's later reading. For example, children's knowledge of the alphabet in first grade is one of the best predictor's of their success in learning to read. Children's vocabulary knowledge is also a good predictor of later reading. However, children's exposure to and acquisition of vocabulary are related to their socioeconomic level, with disadvantaged children being exposed to fewer words over the early formative years than their more advantaged peers. Given the emphasis that is now being given to reading on the national education policy agenda, the results of this study and the timing of these results can contribute to this agenda.

Status of Study and Products: Semiannual performance reports indicate that good progress is being made on this study.

OERI Contact: Jerry West, 202–219–1574

Title of Study: School and Classroom Interventions in Elementary Schools (CRESPAR Program 3)

Principal Investigator(s): Robert E. Slavin and Nancy A. Madden, Johns Hopkins University

Program: Center for Research on the Education of Students Placed At Risk (CRESPAR)

Funding Level: $3,300,165. Year 1 $634,309; Year 2 $621,368; Year 3 $615,706;
Year 4 $714,391; Year 5 $714,391

Project Period: 10/1/94–9/30/99

Project Design: The mission of this research program is to expand and deepen the knowledge base needed to design school and community programs capable of ensuring that all students enter middle schools with the knowledge, skills, attitudes, and habits of mind needed to form a basis for success in middle and secondary school and beyond. We know now that failure in elementary school virtually guarantees failure in middle and secondary school, so a great deal is at stake.

Based upon what is already known from years of implementation and evaluation of the whole-school reform model, Success for All, this research program (1) continues and expands upon impact evaluations of the model in order to determine whether and which lasting effects the model has when fully and partially implemented; (2) implements and evaluates both the expanded Success for All model called Roots and Wings, and Literacy as a Lever for Change, an alternate reform model based upon Reading Recovery instructional and organizational practices; and (3) investigates two very important, and to date virtually unstudied, aspects of at-risk students' education: the potential of after-school support programs, the short- and long-term consequences of tracking practices, and factors supporting successful transitions to middle school.

At the heart of these studies are questions of effectiveness, generalizability, and replicability:

- What works in general for at-risk students? What works for particular groups of students?
- What more can we learn about the different aspects and problems of the education of at-risk students, and how can we use that information to change our schools for the better, and educate at-risk students for success?

Educational Significance of the Study: Research has shown that school reform models can make a difference in student achievement, and especially in the achievement of at-risk students. The combination of family and community support, extended professional development of teachers, intense focus on learning to read and write, committed school leadership, and high expectations of students contribute greatly to their chances of improvement. The recipe for that improvement contains many different elements. They are the elements that have undergirded the growing national momentum toward changing our schools to assure better education for all, and especially for those most at risk of failure. We know already that several recipes work well. Different reform models therefore represent different recipes for change, and different opportunities to implement and evaluate what works for at-risk students, how well it works, and for whom. The growing use of an effective reform model over the past 10 years underlines how imperfectly we understand other aspects, other problems of the education of at-risk students. This research program asks some of the important questions in different reform configurations, and studies important issues related to scaling up their use. The information the studies provide will be used to implement and evaluate further school program developments and changes, with a particular focus on improving the way we educate at-risk students.

OERI Contact: Oliver Moles, 202-219-2211

Title of Study: A Longitudinal Study of the Lasting Effects of Success for All (Project 3.1a)

Principal Investigator(s): Robert Slavin, Nancy Madden, and Barbara Wasik, Johns Hopkins University, Baltimore, MD; Steven Ross and Lana Smith, University of Memphis, TN

Program: CRESPAR Program 3: School and Classroom Interventions in Elementary Schools

Funding Level: $1,053,241. Year 1 $191,284; Year 2 $190,856; Year 3 $247,827; Year 4 $211,637; Year 5 $211,637

Project Period: 10/1/94–9/30/99

Project Design: Success for All is a model of elementary school reform that has been adopted in more than 700 American schools. It is a "whole-school" model, which means the school that adopts the model reorganizes itself to provide the key instructional and supportive services already shown to improve the achievement of students at risk. The model features an intense focus on learning to read and write, racially and culturally relevant curricular materials, extended professional development of teachers, committed school leadership, family and community partnerships, and support services. The emphasis is on talent development. The model is especially sensitive to key developmental stages in children and building on children's personal and cultural assets. As a result of evaluations already completed, we know that Success for All has a positive impact on most such students' reading and writing achievement while they are in the school, especially if the whole Success for All model is used in the school, rather than just some elements of it.

As the use of Success for All expands, it is also very important to know whether the program has long-term impact on students' achievement and attitudes after they have left the Success for All school and gone on to middle school. The research questions, with the first being the primary question, are:

- How lasting are the effects?
- How well are the students doing, especially in reading and writing?
- What has happened to students' retention rates, special education placements, attendance and other performance behaviors now that they are in a non-Success for All school?
- How do students view themselves in terms of confidence and self-reliance in learning?

This evaluation is actually a set of evaluations in eight different sites. They build upon and expand the longitudinal evaluation of Success for All students begun shortly after the program's inception in 1987, and have the effect of making it much more extensive. It follows 60 sets of students in several dozen schools, more than 8,000 in all, for as long as they remain in school, even if they are retained or assigned to special education classes. By 1999, its final year, a number of these sets of students will be completing the 11th grade. In addition to the regular collection of personal and academic data on all these sets of students, statistical and interview data and information are collected each Spring over a 5-year period. Questionnaires are used when the students are interviewed at age 15. The analysis of the data comparing students who have been in the program (the experimental group) with students who have not (the control group) measures and compares the changes that Success for All students have undergone and focuses on the achievement and affective gains that have endured among Success for All students.

Educational Significance of the Study: Success for All has proven to have very considerable initial effects as a way to improve the education of at-risk students, and especially their reading skills. An essential question is whether any school reform that is prima facie a success has enduring positive effects on students: on their intellectual growth, attitudes, and skills achievements. If it does, then the reform model is worthy of even wider use in the nation. Preliminary findings from several of the component studies, including one of a bilingual Success for All program, show considerable positive effects. When completed, this longitudinal study will give us for the first time a great deal of reliable and relevant information from diverse locations and kinds of students on which to base decisions related to the adoption of the model. The Obey-Porter amendment recently passed by Congress enables school districts to pay far greater attention to school reform, which gives increased importance to the information this study is providing and will provide.

Status of Study and Products: *Success for All: A Summary of the Research* by Robert Slavin et al. was published in 1996. *An Assessment of Success for All Program Component Configuration Effects on the Reading Achievement of At-Risk First-Grade Students* by John Nunnery et al. was published in 1996. *Every Child, Every School: Success for All* by Robert Slavin et al. was published in 1996. Annual reports and numerous articles and technical reports show that full progress is being made in the study. A definitive report will be issued in 1999.

OERI Contact: Oliver Moles, 202–219–2211

Title of Study: Roots and Wings: Implementing Constructivist Curricula in Elementary Schools Serving Students Placed At Risk (Project 3.1b)

Principal Investigator(s): Robert E. Slavin, Nancy A. Madden, and John Nunnery, Johns Hopkins University, Baltimore, MD; and Steven Ross, University of Memphis, TN

Program: CRESPAR Program 3: School and Classroom Interventions in Elementary Schools

Funding Level: $795,512. Year 1 $148,150; Year 2 $140,848; Year 3 $149,110; Year 4 $178,702; Year 5 $178,702

Project Period: 10/1/94–9/30/99

Project Design: Roots and Wings is an expanded version of the Success for All school model, with the addition of two dimensions: new content areas, and a constructivist approach to teaching and learning. This approach, which has gained considerable interest among researchers and practitioners as a more effective way for at-risk students to learn, emphasizes that students are not passive recipients, but actively construct knowledge for themselves. Discovery, experimentation and open-ended problem solving are emphasized: students wrestle with big ideas and real-world tasks to discover meaning and develop skills. Math and social science and science, areas in which students at risk have been found to be quite weak, have been added to the preschool, reading, writing, tutoring, and family support elements of Success for All to create the Roots and Wings model.

No practical, replicable constructivist approaches have been implemented and evaluated in high-poverty areas. The primary research question relates to effectiveness:

- When compared to control schools using traditional instructional methods, and organized in the traditional way, how much improvement in at-risk students' academic achievement, and in other dimensions of their lives, can be seen?

There are three evaluations: the MathWings and WorldLab curricula used in Roots and Wings are each being evaluated separately, and the entire Roots and Wings model is being evaluated.

The evaluation of the MathWings program is being done in 16 4th- and 5th-grade Texas classrooms, 8 of which are control classrooms. This study focuses on both basic and advanced math skills, and has shown initially very substantial gains among MathWings students: an evaluation of four Maryland Roots and Wings schools showed that students had large gains in math, when compared to state averages measured by achievement on the Maryland School Performance Assessment Program (MSPAP), a state test. Those gains continued until the schools had to withdraw through lack of funding.

The WorldLab evaluation focuses on 16 experimental and control classrooms, to determine growth in how students conceptualize in science and in social science, how they apply those concepts, and how well they write about their conceptions.

The evaluation of the Roots and Wings model compares 12 experimental and control schools using the same achievement measurement and analysis as the MathWings and WorldLab evaluations, augmented by ratings of writing samples and reading, and measuring such outcomes as retentions, special education placements, and disciplinary referrals.

Educational Significance of the Study: The experiments/evaluations done to date show that Success for All schools enjoy a great deal of success in improving at-risk students' achievement when compared to schools using traditional methods of instruction and organization. The importance of having a firm foundation in reading, math, and science to middle school cannot be overestimated. The Roots and Wings experiments/evaluations therefore take the Success for All features and findings several important steps further.

Status of Study and Products: *MathWings: Early Indicators of Effectiveness* (1997) by Nancy Madden et al. was published in 1997. Several articles and book chapters have been published in the past year. Annual progress reports have been received, and two more are due.

The evaluation of the Roots and Wings model will be completed in Summer, 1999. A definitive report is due in September 1999.

OERI Contact: Oliver Moles, 202–219–2211

Title of Study: Literacy as a Lever for Change (Project 3.1c)

Principal Investigator(s): Anthony Bryk and Sharon Rollow, University of Chicago, Chicago, IL

Program: CRESPAR Program 3: School and Classroom Interventions in Elementary Schools

Funding Level: $355,963. Year 1 $73,920; Year 2 $70,883; Year 3 $72,992; Year 4 $69,084; Year 5 $69,084

Project Period: 10/1/94–9/30/99

Project Design: The Center for School Improvement at the University of Chicago and the National Center for Reading Recovery at Ohio State University are collaborating in a partnership with the Chicago Public Schools to implement and evaluate the Literacy Development Model in seven public elementary schools with preponderant populations of at-risk students. The Literacy Development Model is based upon a number of elements of school reform already shown to be effective. It incorporates the Reading Recovery model of reading instruction, which is based on an intensive set of tutorial approaches and has been shown to have positive impact on students' reading achievement. The principles guiding the model are to start early with students, enhance the practice of teachers with a regular program of professional development, add reading and academic services at every level, use an integrated accountability system, develop and promote a professional community, and foster active, engaged partnerships with home and community.

The model is a potentially effective way to raise the literacy levels of at-risk students early in their development, to change their ability to grow academically, and to set them up early for success. The purpose of this research study is to implement and evaluate the experimental model in order to address the following research questions:

- Does the model raise the literacy levels of at-risk students and change their ability to grow academically?
- What are the external supports, interventions, and working relationships that are also needed to help the model succeed?

The evaluation is studying both the process of training and development and the process of organizational change in the schools. Using a data baseline from 30 students in grades K–3, researchers are following that cohort for 5 years. They add an additional cohort of new kindergarten students in each of subsequent 4 years, to be followed for the duration of the study. Matched control schools serve as the basis for comparison for data from the Iowa Test of Basic Skills. Project staff are gathering and analyzing personal and mean and individual academic achievement information on students in order to measure the program's impact on student achievement.

Educational Significance of the Study: Urban and rural disadvantaged students at all school levels are often being poorly served by the traditional instruction and organization of their schools. In response to the increasing numbers of such students and the accelerated drop-out rates, a variety of school reform models have been developed over the past 15 years. The momentum to develop and implement them locally has been building throughout the nation over the past few years. Since the 1980s, such models as Success for All and Reading Recovery have not only been implemented at the elementary level, but evaluated. They have proven to be effective in improving student reading achievement.

The problems of the Chicago Public Schools have been widely publicized. In response, this experiment in implementation and evaluation tries to combine several strong organizational and instructional features from several different school reform models in order to be effective in reorganizing the schools, both in Chicago and throughout the nation, to produce academically stronger, more committed students and stronger, happier teachers and schools.

Status of Study and Products: *Fostering School Development Using Literacy as a Lever for Change: A Report on Work in Progress in Chicago Elementary Schools* by Anthony Bryk and Sharon Rollow was produced in 1996. Annual progress reports have been received. A definitive report is due in late 1999.

OERI Contact: Oliver Moles, 202–219–2211

Title of Study: Supporting Student Development in the After-School Hours (Project 3.2)

Principal Investigator(s): Robert Slavin and Olatokunbo Fashola, Johns Hopkins University, Baltimore, MD; and Steven Ross, Memphis State University, TN

Program: CRESPAR Program 3: School and Classroom Interventions in Elementary Schools

Funding Level: $478,484. Year 1 $68,848; Year 2 $69,043; Year 3 $69,677; Year 4 $135,458; Year 5 $135,458

Project Period: 10/1/94–9/30/99

Project Design: The objectives of the study are: (1) to identify model after-school programs currently in operation and to summarize the current research on such programs; (2) to develop and implement after-school programs to meet the needs of urban and rural elementary and middle school students; (3) to identify optimal program options for diverse family and student needs; and (4) to evaluate the effectiveness of such programs on short- and long-term student outcomes. The study addresses several questions:

- What blends of academic and enrichment activities will meet goals and maintain student involvement?
- How can programs attract students most at risk?
- How do such programs benefit students' cognitive, affective, and social development?
- How best to modify programs to serve culturally diverse students?

A survey of more than 300 Success for All schools to identify program options, sources of funding, and community interest has been completed. In addition, a study of an after-school program of academic support for high-risk students in Memphis, Tennessee has been completed.

This project also includes a review and synthesis of the research literature on program options, program funding, assessment of community needs, integration of academic programs, service integration options, and the assessment of quality. Finally, a formative and summative evaluation of the Baltimore Child First Authority after-school program is underway.

Educational Significance of the Study: A major concern about at-risk students is that so many of them spend significant amounts of unsupervised and unstructured time during nonschool hours. The 1993 Carnegie Report, *A Matter of Time: Risk and Opportunity in the Non-School Hours*, points out that part of the solution to the problem of underachievement among at-risk students is to offer a variety of programs suited to the needs of students and families, improve the quality of existing programs, and involve many more at-risk students in rural and urban communities in after-hours programs.

This project will provide the first-ever review and synthesis of research and program information on after-school programs. It will provide a descriptive evaluation of an after-school program currently in operation, and an evaluative review of effective after-school programs. In addition, the survey is also a first-ever effort to gather information and the results of experience from a wide variety of school sources on their after-school programs.

Finally, Congressional interest in after-school programs reflects a growing awareness of how much more can be done to increase at-risk students' potential for success; the activities described here will take us several large steps ahead in understanding the options and collecting/assessing information on how to implement programs effectively, and which programs are more effective.

Status of Study and Products: *An Evaluation of the Extended-Day Tutoring Program in Memphis City Schools* by Steven Ross et al. was completed in 1996. The review of the literature and the descriptive evaluation of the Child First Authority programs are due in 1998. Annual progress reports are provided. A final report is due in late 1999.

OERI Contact: Oliver Moles, 202–219–2211

Title of Study: Patterns and Consequences of Early Tracking: From First Grade into Middle School (Project 3.3)

Principal Investigator(s): Karl L. Alexander, Johns Hopkins University, Baltimore, MD

Program: CRESPAR Program 3: School and Classroom Interventions in Elementary Schools

Funding Level: $140,691. Year 1 $25,000; Year 2 $26,596; Year 3 $26,597; Year 4 $31,249; Year 5 $31,249

Project Period: 10/1/94–9/30/99

Project Design: Children's experience of schooling in the primary grades is far from uniform because they are often placed in different learning groups. Such tracking practices as ability-based reading groups, retention, and special education create new identities and structure different daily routines. Despite much study, important issues about early tracking have received little attention. This study examines the impact of tracking placements across levels of schooling, from the early primary grades into middle and ultimately high schools. The first issue is:

- Do particular tracking placements and patterns of placements have distinctive consequences?

The study examines how ability-based reading group, retention, and special education placements influence children's school experience in the early primary grades.

- In first grade, for example, what fraction of children placed in low reading groups are held back at year's end and/or assigned to special education?
- Are tracking placements distinctive by race/ethnicity, family background, early academic markers (for example, test scores), and children's school behavior?
- How do different placements impact on children's cognitive and affective development over the primary grades?

Tracking placements may constrain opportunities at the middle grades and beyond, but whether such constraints extend back to children's very first encounters with educational tracking remains to be determined. In addition to examining how tracking placements influence children's school experience in the early primary grades, this researcher is investigating whether early tracking influences tracking placements at the upper grade levels.

The data are from the Beginning School Study (BSS), which has been following the academic progress and personal development of 790 representative students in 20 Baltimore schools since they began first grade in the Fall of 1982. The children in the BSS have been interviewed numerous times (Fall and Spring in most of the elementary school years; once annually most years thereafter), as have their parents. Test scores, grades, problem situations, tracking outcomes (promotions, special education placement, curriculum placement) are included in the analysis. The collected data is being analyzed using descriptive and multivariate statistical methods.

Educational Significance of the Study: The results of this study will provide valuable information to understand the patterns and consequences of early tracking placements, including at-risk children's intellectual and emotional development and their transitions from elementary school to middle school. The information will be used in the development of CRESPAR's school restructuring programs for at-risk students.

Status of Study and Products: Two research reports have been produced: *Tracking patterns in the primary grades* and *Consequences of early grouping*. Preliminary findings of this project suggest that children's experiences of tracking placements in an early grade put them at greater risk than other students for continued tracking placements. Three more reports will be produced before the end of the project, including the final reports.

OERI Contact: Ok-choon Park, 202–208-3951

Title of Study: What Predicts Successful School Transitions? Investigations Using Prospects Data (Project 3.4)

Principal Investigator(s): Nancy L. Karweit, Johns Hopkins University, Baltimore, MD

Program: CRESPAR Program 3: School and Classroom Interventions in Elementary Schools

Funding Level: $145,802. Year 1 $49,024; Year 2 $47,275; Year 3 $49,503

Project Period: 10/1/94–9/30/99

Project Design: Poor and minority children have a greater chance of school failure and early school leaving than do their advantaged peers, but many of these children do succeed in school and life. This suggests that children with similar backgrounds fare differently depending upon the supportive mechanisms in their environments. However, little research has been conducted to find what these supporting mechanisms are and how schools might put them in place for students.

This study is examining the research question:

- What factors enable and inhibit children from making successful transitions in their school careers?

The researcher is analyzing data from the U.S. Department of Education's Prospects study, which collected longitudinal data on large samples of first-, third-, and seventh-graders. Beginning in the 1990–91 school year, the progress of these students was tracked through elementary and middle schooling, until 1996. Data at the student, classroom, school and district levels were collected in each year of the study using survey instruments and a set of cognitive tests. These data are being analyzed to examine the personal and environmental factors of students in high-poverty schools who do and do not make important school advancements. Successful school advancements are measured by such factors as on-time grade progression, attendance, grades, and evaluations of the child's progress by the teacher and parent.

Educational Significance of the Study: Preliminary findings suggest that children's health, ethnic background, parents' social and educational status, and school characteristics all influence their school advancements. The results of this study will reveal what kinds of individual and situation arrangements help these at-risk students achieve successful school advancements. Also, this study will suggest important instructional practices and approaches that are linked to student progress, the role of school climate, expectations of teachers in promoting successful school advancements, and other factors of supportive school environments.

Status of Study and Products: The report *Analyses of Successful Transitions Using Prospects Data: The Prevalence, Timing, and Effects of Retention* has been completed and another, *Analyses of Successful Transitions: Individual, Classroom, and School Influences on Academic Performance*, has been drafted.

OERI Contact: Ok-choon Park, 202–208–3951

Title of Study: School and Classroom Interventions in Middle and High Schools (CRESPAR Program 4)

Principal Investigator(s): James M. McPartland and Douglas J. Mac Iver, Johns Hopkins University, Baltimore, MD; and Sylvia Johnson and Serge Madhere, Howard University, Washington, DC

Program: Center for Research on the Education of Students Placed At Risk (CRESPAR)

Funding Level: $8,183,446. Year 1 $1,308,504; Year 2 $1,564,018; Year 3 $1,370,594; Year 4 $1,970,165; Year 5 $1,970,165

Project Period: 10/1/94–9/30/99

Project Design: There are three definitive studies and one related study in the Program. The definitive studies are designed to:

- design, implement, and evaluate a model middle school at Central East Middle School in Philadelphia based on the Talent Development framework;
- design, implement, and evaluate a model high school at Patterson High School in Baltimore based on the Talent Development framework, supported by concurrent studies to evaluate several existing high school interventions; and
- define and analyze how "Opportunities to Learn" in middle and high school grades affect student success, by analyzing three national longitudinal data sets: Prospects; National Education Longitudinal Study of 1988 (NELS:88); and High School and Beyond (HS&B). A related study examines the use of new assessments in middle and high schools.

A substantial paradigm shift is taking place in thinking about education in middle and high schools. Up to the present, the dominant paradigm has emphasized the sorting function of secondary schools. This sorting paradigm is now being challenged by a new paradigm and new forms of school organization and classroom practice. The new approach, called a "talent development" perspective, is focussed on doing whatever it takes to see that all children achieve their full potential. Program 4 is developing and testing models based on this perspective and building the knowledge base to inform educators and policymakers about what will be needed to remake secondary schools in which all students can succeed. The concurrent studies to evaluate several existing high school interventions that address different specific talent development issues include Equity 2000, Challenge for Science Literacy, Career Academies, and Responsive Teacher Teams.

Educational Significance of the Study: At the heart of the talent development perspective is the idea that all children must be engaged in a common core of studies emphasizing high-order learning activities and demanding standards. This means that tracking policies which have held back the progress of students in the lower tracks must be eliminated. It also means that classroom experiences emphasizing active student learning of challenging and authentic materials must be offered to all. In concept, this idea is appealing but there is a great deal of work to be done to identify effective strategies to help schools and teachers operationalize a talent development philosophy. More needs to be known about effective teaching strategies for very heterogeneous classes; means of helping students who are struggling to keep up with high-expectations curricula, and methods for increasing student motivation to achieve excellence. Additionally, more needs to be learned about how to create caring, supportive and personalized environments for adolescents.

OERI Contact: Susan Talley, 202–219–2129

Title of Study: The Talent Development Model Middle School (Project 4.1)

Principal Investigator(s): Douglas J. Mac Iver, Johns Hopkins University, Baltimore, MD; and Serge Madhere, Howard University, Washington, DC

Program: CRESPAR Program 4: School and Classroom Interventions in Middle and High Schools

Funding Level: $2,210,831. Year 1 $325,723; Year 2 $472,768; Year 3 $364,604; Year 4 $523,868; Year 5 $523,868

Project Period: 10/1/94–9/30/99

Project Design: The Talent Development Middle School philosophy is that it is the school's responsibility to bring to bear whatever resources are necessary to insure all students reach high standards of achievement. It works to minimize course failures, grade retentions, tracking, and disciplinary removals with flexible use of powerful education resources and incentives to deal with student risk factors. The model is based upon 20 years of research on the various issues related to obtaining educational success for at-risk students in secondary school programs. This project is designed to address the following questions critical to translating research findings into an effective model for middle schools with large numbers of at-risk students:

- How do we bring together previous research findings into an effective comprehensive reform program for middle schools?
- What are the major hurdles associated with making the changes in school organization and practice required to implement such a program into an already existing middle school? How do we overcome those obstacles?
- What is required to "scale up" such a program (enable other middle schools to implement the program and replicate success)?

The essential components of the Talent Development Middle School model that is being implemented and evaluated by this project include: demanding curriculum for all aimed at active student learning of higher order competencies; school organization to support stronger teacher-student bonds for learning by creating interdisciplinary teacher teams to address individual student needs; classroom organization that focuses on approaches and pedagogies that teachers can use successfully with heterogeneous groups of students; guidance experiences to encourage student's college aspirations, and realistic understanding of postsecondary options; flexible use of time and resources to provide multiple means of giving extra help for students to prevent course failures and to achieve high standards; new assessment procedures that recognize student progress and provide better incentives to students and teachers to expect and achieve high learning goals; and parent and community partnerships with the school to connect and coordinate learning activities.

Two middle schools, one in Philadelphia and one in Washington, DC have agreed to work with CRESPAR to develop and evaluate the Talent Development Middle School model. In addition, the Carnegie Council on Adolescent Development staff are introducing the model and its key components to its Turning Points national network of middle schools. CRESPAR researchers are evaluating the model with attention to the following issues:

- Studying new ways of presenting learning challenges to students that connect with their cultural traditions and long-term goals, including ongoing occupational exploration and educational guidance experiences that use appropriate role models and exercises to make the educational steps toward a college career realistic and appealing;

- Exploring ways to help teachers appreciate the learning potential of all students, including experimenting with methods of recognizing student academic growth and improvement from different starting points as an additional criterion of success;

- Investigating different routes and different motivational challenges to high standards for different learners, including the use of a variety of systems for delivering extra help when needed, such as adult and peer tutoring, scheduling of double doses of courses in subjects where students have fallen behind to allow them to catch up quickly, and extending time of the school day and year with alternative learning activities;

- Evaluating different middle school interventions designed to create a common demanding curriculum and a caring community of learners, including the identification of new or expanded roles for academic departments and teacher teams;

- Addressing the tension between the need for staff who have subject-matter expertise and the need for staff with warm and caring orientations toward their students, by implementing variants of core programs and interdisciplinary teams; and

- Implementing proven approaches for involving parents and community members.

The evaluation is examining the model's major impacts on school climate, teacher commitment, and student outcomes. A comparison school in each city, closely matched to the models on student composition (i.e., race, sex, poverty status, and previous achievement), has been identified. The model and comparison schools are administered student tests and student and staff questionnaires on climate, commitments and outcomes. Survey questionnaires to students and teachers are administered annually to measure key aspects of school norms and students personal development linked to measures developed for Prospects and National Education Longitudinal Study of 1988.

The model was piloted in the first year, and is now being evaluated, with modifications and additions based on new CRESPAR findings. Impact studies are being conducted on participating teachers and students. Two additional sites will be added in years 4 and 5 with a view to determine how to alleviate start up problems occurring in the first sites, and also to test further the transferability of the model.

Educational Significance of the Study: The middle school years can often be the turning point in the schooling careers of many poor and minority students. Some students successfully progress through the middle grades preparing themselves well for further education in high school and beyond, but many others during this period begin a pattern of poor attendance, course failures, and serious disciplinary encounters that lead to early school dropout and other troubles. Recent research on the components of effective middle schools and clear theories of how to foster the positive relationships and supportive conditions that are so important to youth at this time of their lives, is beginning to shed light on how schools can change in order to be able to help all students succeed. This project implements, evaluates, and attempts to scale up a middle school reform model that incorporates the best features of this recent research.

Status of Study and Products: The project has published three important documents, including one that discusses in some depth the principal components of the model, and two that report on outcomes of the reading/English/language arts curriculum used with the model.

OERI Contact: Susan Talley, 202–219–2129

Title of Study: The Talent Development Model High School with Concurrent Supportive Studies (Project 4.2)

Principal Investigator(s): James M. McPartland, Johns Hopkins University, Baltimore, MD; and Velma LaPoint, Howard University, Washington, DC

Program: CRESPAR Program 4: School and Classroom Interventions in Middle and High Schools

Funding Level: $3,627,067. Year 1 $629,044; Year 2 $690,450; Year 3 $638,239; Year 4 $834,667; Year 5 $834,667

Project Period: 10/1/94–9/30/99

Project Design: Many promising ideas have been advanced regarding how to reform high schools, but scientific research and development has not played a significant role in setting the reform agenda and evaluating the efforts. The studies that do exist have provided no clear guidance on the detailed changes in school organization and practice that are needed to enable schools and districts to implement and replicate their findings. This project is designed to address the following questions critical to translating research findings into an effective model for high schools with large numbers of at-risk students:

- How do we bring together previous research findings into an effective comprehensive reform program for high schools?
- What are the major hurdles associated with making the changes in school organization and practice required to implement such a program into an already existing high school? How do we overcome those obstacles?
- What is required to "scale up" such a program (enable other high schools to implement the program and replicate success)?

Researchers are implementing and evaluating the Talent Development High School model in two nonselective high schools, one in Baltimore and one in Washington, DC. In the third year of the study, four additional high school sites will be added to the study—two in Washington, DC and three in Baltimore. The project also investigates various strategies for scaling up the model nationally, including the creation of technical assistance delivery systems located at regional laboratories, and in the central offices of large school systems. The study design fucuses intensively on how the model reforms are influencing four motivational needs of students that, when unmet, can lead to disengagement and dropping out: relevance of schoolwork, opportunities for academic success, participation in a supportive human learning community, and help with personal problems.

The evaluation is addressing each of the following components of the Talent Development High School model:

- College and School-to-Career Connections (challenging all students to pursue college admission, postsecondary technical training, and/or for viable work careers by providing research-based and realistic information, counseling, and practical assistance on each aspect of the process);

- High curriculum standards with adequate support (offering a core curriculum of high standards to all students and integrating curricula across subject areas with culturally relevant materials and resource enhancements with resource enhancements to provide extra help when it is needed);

- Responsive Teacher Teams (creating a successful transition to the first year of high school and beyond through the use of small clusters of teachers and students to create a small learning community);

- Career Academies (integrating academic and career-oriented curriculum in the Career Academy framework to combine relevance and holding power with strong academic learning activities);

- Ninth-Grade Academies (separating the ninth-graders from the upper grade students through the provision of a separate building area and entrance, a clear identity, and creation of "subschools" within the ninth grade with consistent groups of teachers and students);

- Alternative program for discipline problems (creation of a "Twilight School" after regular school hours for students who have major discipline and school adjustment problems);

- Parental involvement (designation of one member of each teacher team as responsible for creating effective home school partnerships for students on that team); and

- Opportunities for academic success (provision of recovery chances for credit gaps in the form of summer school and after school programs to earn course credits).

Two of the Talent Development High School components, the Responsive Teacher Teams and the Career Academies components, are being studied and developed in greater depth through a series of separate substudies carried out in collaboration with the Manpower Development Research Corporation.

Implementation studies also focus on issues related to school safety and security, development of social skills, career exploration maintenance of cooperative classrooms, development of listening comprehension skills at the secondary level, and management and instructional issues related to the use of block scheduling. In additional to collecting and analyzing student attendance and performance data, the project is surveying school faculty about climate and teaching conditions, and report card grades and course credits. These data are compared with similar data drawn from two comparable nonselective high schools in Baltimore, MD and Washington, DC.

Educational Significance of the Study: Public high schools to which poor and minority students are assigned in many urban and rural areas are failing to provide effective learning environments. Student absenteeism and dropout rates are high, and the students who do persist often do not reach even minimum levels of academic achievement. Fundamental reforms are needed in these schools to develop the talents of all students. This project will advance understanding of high school reform by testing a model of reform that brings together the various components identified as important to address this complex challenge. The work will also enhance our understanding of how complex interventions, such as this model of high school reform, can be scaled up.

Status of Study and Products: Several important publications have been produced, including one that discusses the essential components of the Talent Development High School Model, and others that review outcomes based on the first 3 years of implementation at Patterson High School in Baltimore. Additionally, several manuals to guide practitioners in how to implement the various components of the model have been developed including one on block scheduling, the Ninth Grade Academy, and a Patterson administrators' handbook.

OERI Contact: Susan Talley, 202–219–2129

Title of Study: Opportunities to Learn: Analyses of National Longitudinal Data (Project 4.3)

Principal Investigator(s): James M. McPartland Will Jordan, and Stephen Plank, Johns Hopkins University, Baltimore, MD; and Serge Madhere, Howard University, Washington, DC

Program: CRESPAR Program 4: School and Classroom Interventions in Middle and High Schools

Funding Level: $1,300,941. Year 1 $251,799; Year 2 $316,989; Year 3 $311,629; Year 4 $210,262; Year 5 $210,262

Project Period: 10/1/94–9/30/99

Project Design: "Opportunities to learn" is a key concept for establishing schools with high standards for all students. The concept means that instruction, including the use of learning resources, should ensure that all students from different backgrounds have a fair chance to achieve to high standards. But the concept has yet to be developed into instructional programs based on scientific evidence of the school and classroom factors that are important for the learning of different students. Recent national longitudinal surveys that cover elementary, middle, and high school grades and the transitions between them—Prospects, National Education Longitudinal Study of 1988, and High School and Beyond—provide a major resource to study important factors and conditions for "opportunities to learn." The researchers are using these data to investigate the question:

- How do school policies and investments lead to improvements in student outcomes?

The study is considering a broad range of student outcomes including: academic achievement; self-esteem, self-reliance, and help-seeking activities; attitudes toward school and learning; and transitions to college and careers. Special attention is being given to school dropout problems, and information about the timing and sequence of dropout behaviors is being examined in order to develop approaches to dropout prevention and dropout recovery.

Educational Significance of the Study: This study will help determine how variations in learning outcomes, dropout rates, and school transitions are related to specific aspects of classroom pedagogy; relationships among teachers, students, and parents; and connections of schools to home and community. The results will reveal conditions limiting "opportunities to learn" and important factors for creating the opportunities. Findings will help in developing school policies and investment decisions, and in designing more effective learning environments.

Status of Study and Products: Five reports have been produced on the relationships between students' personal and social factors and their academic development, including school transitions. At least two more reports will be delivered before the end of the project.

OERI Contact: Ok-choon Park, 202–208–3951

Title of Study: Broadening the Scope of Assessment in Schools (Project 4.4)

Principal Investigator(s): Sylvia Johnson, Howard University, Washington, DC

Program: CRESPAR Program 4: School and Classroom Interventions in Middle and High Schools

Funding Level: $549,619. Year 1 $63,757; Year 2 $83,811; Year 3 $56,121; Year 4 $172,965; Year 5 $172,965

Project Period: 10/1/94–9/30/99

Project Design: In recent years, there has been a growing movement toward the use of performance-based assessments that require students to construct responses rather than to merely choose an answer from a number of options. One of the new variety of formats, termed "enhanced multiple-choice items," even requires both types of responses from the examinee. These "authentic" assessments can place more demands on both students and teachers by requiring students to demonstrate their understanding of curricular content in a number of ways. Further, it has been observed that performance-based assessments tend to be less available to students in schools with poor instructional, material, and curricular resources. Researchers hypothesize that, although part of the problem is cost, another has to do with professional development in relationship to teacher readiness to implement newer forms of assessment. Therefore, this project seeks to answer the question:

- What activities and experiences will effectively broaden teachers' use of assessment strategies that are aligned with sound curricular standards and effective pedagogical practices?

This project involves the development of a professional development program for teachers in schools serving at-risk students. Teachers were provided with general information about testing, as well as more specific information on performance-based assessment. Researchers observed and analyzed teachers' use of and attitudes toward assessments. Teachers' needs for broader experiences, identified by focus group interviews and structured surveys, also are examined by the researchers.

Subsequently, a series of summer training sessions targeted for middle school mathematics teachers were collaboratively planned with the Washington DC Public Schools, and organized and conducted by the project researchers and consultants. A "teacher assessment collaborative" was formed to prepare a cadre of "assessment-wise" teachers. Project researchers observe and analyze classroom instruction and the use of performance-based assessments. In addition, the researchers monitor the progress of students on a wide range of achievement measures over time. While the initial focus of this project is on the middle school level, further research also will be conducted at the high school level.

Educational Significance of the Study: Assessment is an integral part of the instructional process and should be compatible with instructional content and delivery. Thus, focusing on performance-based assessments that are closely tied to instructional methods that promote learning for understanding may result in improved teaching. This project will facilitate the development of an enhanced level of comfort and sophistication around current assessment technology for teachers, particularly teachers of at-risk students.

Status of Study and Products: Several conferences and workshops on performance assessment were held for teachers. Survey instruments were developed to measure teacher beliefs, attitudes, efficacy and classroom practices; and teachers' assessment experiences and needs. Two reports were produced from the conferences and workshops, and additional reports will be produced before the end of the project.

OERI Contact: Ok-choon Park, 202–208–3951

Title of Study: Language Minority Studies (CRESPAR Program 5)

Principal Investigator(s): Robert Slavin, Johns Hopkins University, Baltimore, MD; and Richard Duran, University of California, Santa Barbara, CA

Program: Center for Research on the Education of Students Placed At Risk (CRESPAR)

Funding Level: $2,728,369. Year 1 $557,222; Year 2 $557,000; Year 3 $542,763; Year 4 $535,692; Year 5 $535,692

Project Period: 10/1/94–9/30/99

Project Design: The Language Minority Studies Program is founded on the principle that the education of children placed at risk of educational failure who are from non-English speaking backgrounds must begin with responsiveness on the part of schools to the linguistic, social, and cultural resources of these students. They bring special skills to the classroom and have unique teaching and learning needs. Further, schools must help these students to make critical school and academic transitions in order to be successful. Accordingly, proper school planning, professional development, and accountability efforts are necessary to ensure that all students achieve to high standards.

This program focuses on the development and evaluation of promising approaches to bilingual education in the elementary grades. Further, the studies are designed to develop and evaluate teaching methods that help students think and construct knowledge to make sense of the conceptual material arising from everyday experiences in school and in the classroom. The studies are also investigating the conditions under which these students learn and use subject matter.

Educational Significance of the Study: The studies in the Program are significant for numerous reasons. The first is that four of the studies constitute a "definitive study" intended to develop and test effective approaches to the acquisition of literacy in English for limited English proficient students whose first language is Spanish. Another series of studies is implementing and comparing three interventions for non-English speaking background and native English speaking students in third through fifth- and sixth-grade classrooms. The research interventions stress students' active thinking through the language of instruction in exploring the meaning of text and literature. Another feature of the studies is a gauge of parental and community member involvement to ensure that the interventions are as realistic and comprehensive as possible, under research conditions.

Quantitative longitudinal studies are also being conducted to ensure the careful documentation of changes across time and student cohorts. Accordingly, some of the studies are also investigating approaches to the dissemination and implementation of effective practices for these students.

In short, the studies in this Program are focused on the identification, description, and explanation of the features of effective teaching and learning that work for students who are at risk of educational failure, due mostly to their academic, linguistic and cultural characteristics, past schooling and current programs, and services available to them as they progress and transition through grades, subject matter, teaching approaches, and schools. The expected Program outcomes will provide new insights into teaching and learning and the demands they place on the educators whose responsibility it is to provide high quality services to these students.

OERI Contact: Gilbert N. Garcia, 202-219-2144

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Title of Study: Activity and Classroom Culture Among Language Minority Students
(Project 5.1a)

Principal Investigator(s): Richard Duran, University of California, Santa Barbara, CA

Program: CRESPAR Program 5: Language Minority Studies

Funding Level: $783,230. Year 1 $153,897; Year 2 $153,523; Year 3 $158,660;
Year 4 $158,575; Year 5 $158,575

Project Period: 10/1/94–9/30/99

Project Design: The purpose of the project is to work with teachers to develop and implement instructional strategies that stress student construction of knowledge and the acquisition of thinking skills; related staff development; and investigations of students' classroom learning and achievement outcomes and their interaction with varied curriculum interventions. The researchers have devised new forms of inquiry-oriented instruction that supplement cooperative learning activities in the area of language. A second innovation has introduced enhanced sense-making writing activities that help students create and maintain classroom journals and writing portfolios. A third major activity is the implementation of collaborative group research projects for students as part of their curriculum.

For this study, researchers are collecting and analyzing quantitative and qualitative data to answer the questions:

- What specific instructional activities give rise to achievement?
- How can we demonstrate that instructional activities are effective?

In addition, the researchers are assisting the participating teachers to implement innovative teaching strategies via regularly scheduled professional development meetings and seminars.

The researchers are assessing the effects of exposure of project interventions at the third, fourth, and fifth grades. Included are ethnographic studies of teachers' and students' implementation of classroom interventions via observation, videotaping, and ethnographic documentation. The project was begun with 6 treatment classrooms and 2 other classrooms added during years 2 and 3 for a total of 8 classrooms with approximately 30 children in each classroom group. The three third-grade, three fourth-grade, and two fifth-grade classrooms contain Hispanic bilingual students, including Hispanic nonbilingual and non-Hispanic students in comparison classrooms. The schools are in California. Fourteen teachers are participating in the project during the 1997–98 school year.

Educational Significance of the Study: The project has clear national significance to the field of bilingual education in that the results will contribute demonstrations of effective interventions for students placed a risk of educational failure because of their limited-English proficiency at entry to the observe classrooms. Some of these intervention demonstrations then might be evaluated formally in future research. The interventions are intentionally designed to teach the higher order thinking skills required for advanced schooling while simultaneously developing the English and Spanish linguistic skills of students. Preliminary evidence reveals numerous positive teaching and learning experiences for the students and the teachers. Over the course of the project, the researchers will be able to document the conduct of staff development activities that can be related to increased student achievement.

Status of Study and Products: The project is proceeding on schedule. Deliverables are current and include journal articles, chapters in edited scholarly volumes and research reports, including a student outcomes report titled, *Preliminary Evaluation and Progress Report* that describes program effects to date, staff development outcomes, and dissemination activities.

OERI Contact: Gilbert N. Garcia, 202–219–2144

Title of Study: *Lee Conmigo*: Longitudinal Studies of Bilingual Education in Success for All (Project 5.1b)

Principal Investigator(s): Robert Slavin, Johns Hopkins University, Baltimore, MD; Ron Corwin, WestEd; Judith Marques, University of Houston, Clear Lake TX; and Patricia Prado-Olmos, California State University, San Marcos, CA

Program: CRESPAR Program 5: Language Minority Studies

Funding Level: $484,384. Year 1 $115,772; Year 2 $105,623; Year 3 $106,989; Year 4 $78,000; Year 5 $78,000

Project Period: 10/1/94–9/30/99

Project Design: In 1992, a Spanish adaptation of the *Success for All* reading program called *Lee Conmigo* ("Read With Me") was developed for use in Spanish bilingual programs. This study is investigating the question:

- What are the long-term effects of *Lee Conmigo* on the achievement of limited-English proficient (LEP) students who are initially taught to read in Spanish?

As students begin to transition to English (in third grade) researchers are adding measures of English reading and language, but also continue to assess Spanish reading throughout the evaluation.

The studies are taking place in comparison and experimental classrooms at three sites: a school in Philadelphia, Pennsylvania, a school in Houston, Texas, and two schools in Riverside, California (in two different school districts). Researchers are investigating the teaching and learning effects of the program on these students. Two guiding lines of inquiry are being pursued: what reading instruction looks like in each school; and what it is like to be a student in a bilingual Success For All classroom. Accordingly, the researchers are conducting teacher interviews, classroom observations, student assessments, and ethnographic studies.

The ethnographic studies of *Lee Conmigo* are being conducted in California and Texas. Because previous studies have documented how teachers may interpret a program in very different ways, these ethnographic studies focus on processes of instruction as they are constructed by the teachers and students through their interactions. The studies are following classrooms in high-poverty, entirely Hispanic schools as they progress through the *Lee Conmigo* program and transition from Spanish to English reading instruction.

Educational Significance of the Study: Programs like *Lee Conmigo* are designed to provide a balanced approach to the teaching of Spanish reading in the lower elementary grades to non-English speaking students. The significance of this project is that it represents an attempt to validate the effectiveness of the project on students who are at risk of educational failure because of their limited English proficiency. Many of the studies to date have shown a significantly high rate of transition from Spanish to English for students by third grade.

Educational Significance of the Study: Programs like *Lee Conmigo* are designed to provide a balanced approach to the teaching of Spanish reading in the lower elementary grades to non-English speaking students. The significance of this project is that it represents an attempt to validate the effectiveness of the project on students who are at risk of educational failure because of their limited English proficiency. Many of the studies to date have shown a significantly high rate of transition from Spanish to English for students by third grade

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Status of Study and Products: The project is proceeding on schedule. Deliverables to date include journal articles, chapters in edited scholarly volumes, and research reports including *Effective Programs for Latino Students in Elementary and Middle Schools*, which describes a broad range of effective programs with evidence of effectiveness, coupled with networks of trainers and experienced users, material, manuals, videos, and many other supports.

Substantial findings are already emerging. For example, the Philadelphia study found strong positive effects in reading; many of the students have been able to translate to English instruction. For students who have strong native language skills, their performance is more positive. Results are dependent on how well the program of instruction has been implemented—achievement results for students in poorly implemented programs are lower than for students in well implemented programs.

OERI Contact: Gilbert N. Garcia, 202–219–2144

Title of Study: Development and Evaluation of a Two-Way Bilingual Program (Project 5.1c)

Principal Investigator(s): Margarita Calderon, Johns Hopkins University, Baltimore, MD

Program: CRESPAR Program 5: Language Minority Studies

Funding Level: $291,083. Year 1 $40,280; Year 2 $59,972; Year 3 $60,831;
Year 4 $65,000; Year 5 $65,000

Project Period: 10/1/94–9/30/99

Project Design: Researchers are working with a Texas school district to develop, pilot test, and evaluate a two-way Spanish and English bilingual education program. The study is designed to address the question:

- What are the effects of a two-way bilingual program on students' achievement?

The researchers also are working with teachers and administrators to develop a program that emphasizes cooperative learning, multicultural content, development of multilingual materials, and peer coaching and community building among staff.

Twelve schools in El Paso, Texas are implementing the program in grades K–5. Most of the students are limited-English proficient (LEP), though non-LEP students in experimental third and fifth grades are included. The curricula, organizational structures, student assessments, and inservice methods developed are being evaluated. Teachers are conducting classroom ethnographies, and researchers are observing classrooms and videotaping teachers. Outcome measures include academic achievement in Spanish and English, intergroup relations, attitudes, aspirations, and other cognitive outcomes.

Educational Significance of the Study: The significance of this project is underscored by the fact that researchers have been able to investigate how students create communities of learners to learn two languages. Further, teachers have learned how to conduct classroom ethnographies, analyze them, and plan ways to improve instruction and learning. The importance of the project is further supported by the results to date. For example, the percentage of LEP and non-LEP students in third and fifth grade experimental classrooms who met minimum expectations is larger than those in control classrooms in reading and mathematics.

Status of Study and Products: The full program was implemented in 1995–96 and formal evaluation of the program was begun during school year 1996–97. Deliverables are current and include journal articles, chapters in edited scholarly volumes, research reports, and the first evaluation report.

OERI Contact: Gilbert N. Garcia, 202–219–2144

Title of Study: The Social Construction of Literacy: Studying Communities of Effective Practice for Bilingual/Bicultural Students (Project 5.1d)

Principal Investigator(s): Kris Gutierrez, University of California, Los Angeles, CA

Program: CRESPAR Program 5: Language Minority Studies

Funding Level: $301,582. Year 1 $82,549; Year 2 $53,827; Year 3 $59,042; Year 4 $53,082; Year 5 $53,082

Project Period: 10/1/94–9/30/99

Project Design: This project, grounded in theoretical assumptions about the nature of teaching and learning, is based on the hypothesis that teaching and learning are practices that are socially and culturally organized, learned, and understood. The study is designed to provide a better understanding of:

- How effective literacy instruction for linguistically and culturally diverse students is carried out consistent with the concept of communities of learners.

In this case, communities of learners are defined as students and their teacher in a given classroom whose objective is to learn subject matter, learn how to learn, and learn how to learn from each other. Another, critical component of the study is its investigation of what counts as effective teaching and learning across three distinct communities with language minority students.

The project is an ethnographic study of classrooms through the use of participant observation, field notes, videotaped instruction, and immersion in school-wide activities to document the culture of the schools and the culture of the classrooms. Classrooms are observed three times per week and videotapes are used to capture classroom dynamics and interactions. Further, regular meetings are held with school administrators and others to review observations and findings.

In year 4, the effective methods identified in the research will be introduced to a new set of teachers in similar schools. Their implementation of strategies and approaches will be studied as in the earlier ethnographic investigations.

Educational Significance of the Study: Preliminary results reveal a complex picture of teacher/student interactions that must be carefully orchestrated, managed, and understood. The researchers have observed linguistic, social, and cognitive consequences to organizing the teaching and learning of literacy in ways that are consistent with the notions of a community of learners. The organization of literacy learning in communities of learners has created unique opportunities for positive and sustained cross-racial interaction among students.

Further, the researchers have observed that teachers need assistance in understanding when and how to use explicit instruction and to recognize the fluctuating role of the teacher as expert and as learner is expected and even central to a community of learners model. In classrooms where teachers are well trained to vary instruction and related teaching activities, students respond with vigor and attentiveness and use much of the information they have learned to build higher levels of cognition and social interaction.

Status of Study and Products: The project is proceeding on schedule. Deliverables are current and include journal articles, chapters in edited scholarly volumes, and research reports, including *Culver City and Santa Monica Schools—Effective Practice for Bilingual/Bicultural Students*.

OERI Contact: Gilbert N. Garcia, 202–219–2144

Title of Study: Critical Settings Model of Research Applied in an American Indian Community (Project 5.2)

Principal Investigator(s): Karen Swisher, Haskell Indian Nations University, PA; and
John Tippeconnic, Pennsylvania State University, PA

Program: CRESPAR Program 5: Language Minority Studies

Funding Level: $364,948. Year 1 $97,246; Year 2 $87,762; Year 3 $0; Year 4 $89,970;
Year 5 $89,970

Project Period: 7/15/97–11/30/99

Project Design: Numerous studies since the 1960s have documented the impoverished state of American Indian education, as indicated by high dropout, poor academic achievement, and high substance abuse rates. The current national policy of Indian Self-Determination (in effect since the mid-1970s), was established to address this severe problem through greater involvement and control of Indian tribes over their own affairs. Tribes have gradually assumed control over a majority (98) of the 187 schools administered by the Bureau of Indian Affairs. However, change has been slow and much remains to be done for tribes to attain educational levels comparable to the national average.

The researchers in this study focus on the complex interconnections in the lives of students as the key to reversing this bleak picture. They hypothesize a lack of fit ("congruence") between the students' cultural background and needs, and the climate and practices of the settings in which they function. The researchers have identified the critical settings as health, social services, justice, education, and community institutions, as well as the family.

The major research question posed by this study is:

- What are the congruent processes, social relationships, and interactions in the lives of American Indian students which occur in the critical settings that promote children's engagement in learning, resilience, and educational success?

Engagement refers to willing and active involvement learning, and resilience refers to the ability to withstand, adjust to, or recover from stress or adverse circumstances. Both of these concepts are key to perseverance and success in school and in later years.

The researchers have made an agreement with the Gila River Indian Community (Arizona) for this tribe to act as the site for developing an action research model. The model involves ongoing collaboration between the tribal members/service providers and researchers. A joint research committee has been established to facilitate refining the research design and procedures. The committee guides the process of identifying key sources of incongruity in each of the critical settings and develops strategies that lead to tribal school-wide improvements. A particular focus is dropout rate reduction and increased academic success in school.

Both qualitative and quantitative methods of inquiry are being used. Qualitative methods—such as interviews, observations, document analysis, and case studies of schools and students—examine student relationships with the critical settings. Quantitative methods also are being used, such as analyzing school and tribal services data and súrveys conducted for this study. The researchers are developing papers analyzing findings for each of the critical settings. They also assist the research committee and tribe in the development of a tribal action plan to implement the findings and recommendations of the papers.

Educational Significance of the Study: Tribal communities have rarely benefitted from the findings of cross-cultural educational studies which almost always ignore their problems due to smallness of sample size and their geographic isolation. Furthermore, tribal communities historically have not enjoyed positive collaborative relationships with researchers, thus limiting their ability to benefit from research. This study reverses this trend by building upon a previously successful partnership between the Gila River Indian Community and Arizona State University. This community is receptive and knowledgeable concerning the benefits of collaborative research and is thus in a good position to develop a collaborative research model for dissemination to other tribes. Finally, the vast majority of tribes (including this one) are faced with data that exists in isolation within a given system and it is thus not easy to aggregate and analyze data for planning. This project will define a process for integrating the retrieval of educationally-related data from various systems (e.g., education, social services, justice), thus making information more comprehensive for analysis and planning.

Status of Study and Products: This study, only in existence since July, is making good progress on refining the research design and procedures. A definitive report will be issued at the end of the study.

OERI Contact: Karen Suagee, 202–219–2244

Title of Study: Building Teacher Learning Communities to Support Dissemination of Effective Bilingual Programs (Project 5.3)

Principal Investigator(s): Margarita Calderon, Johns Hopkins University, Baltimore, MD

Program: CRESPAR Program 5: Language Minority Studies

Funding Level: $312,485. Year 1 $61,228; Year 2 $61,362; Year 3 $63,581; Year 4 $63,157; Year 5 $63,157

Project Period: 10/1/94–9/30/99

Project Design: The term "teachers learning communities" (TLCs) describes situations where teachers come together to learn from each other and to coach each other in order to learn better teaching practices and to improve their craft. This study evaluates the TLC approach by investigating the question:

- What are the effects of TLCs in establishing effective methods in classrooms and maintaining program effectiveness over time?

In this case, the focus of the learning is at the adult level—the teachers. This project expands the TLC approach to help maintain a focus on intelligent, flexible, and effective implementation of cooperative learning and linguistically and culturally responsive pedagogies for students who are at risk of educational failure. Bilingual Cooperative Integrated Reading and Composition (BCIRC), which previous research has found to be very effective in increasing student achievement, is the method being implemented in the sample schools.

Questionnaires are administered in 10 bilingual elementary schools and comparison schools to over 40 elementary school and 50 high school teachers to determine practices, perceptions, and plans of school staffs to use innovative teaching methods. Further, videotapes of classroom practices are being made. New TLC centers are being implemented in the current sample of schools. By the end of the project, approximately 100 schools will have been involved in the implementation of BCIRC. The sample also includes a large group of visiting teachers from Mexico who have applied the lessons learned to their schools. A study of their progress in improving teaching is being conducted.

Educational Significance of the Study: It is not easy to track changes in teaching behaviors, much less across time. This project will contribute immensely to our understanding of how teachers change and of the activities that enable them to change for the better. Preliminary study results on teachers' changes across time in sense of commitment and expertise in delivering instruction to diverse students underscores demonstrate the importance of this study.

For example, a large number of the participating teachers have sustained the implementation of the BCIRC program, invented sound teaching techniques, tested them, and used them. The results of BCIRC student scores indicated increased achievement levels for these students in reading, writing, and language arts. Achievement gains have been noted in Spanish as well as English.

The most impressive gains have been seen in the sample of participating teachers who are exhibiting a large number of innovative teaching practices that appear to help students learn core content. For example, all of the teachers in the math department of one of the high schools saw their students attain the highest scores in the school district this past school year.

Status of Study and Products: The project is proceeding on schedule. Deliverables are current and include journal articles, chapters in edited scholarly volumes and research reports, including *Teacher Learning Communities to Support Effective Bilingual Programs*.

OERI Contact: Gilbert N. Garcia, 202–219–2144

Title of Study: School, Family, and Community Partnerships (CRESPAR Program 6)

Principal Investigator(s): Joyce L. Epstein, Johns Hopkins University, Baltimore, MD; and
Hope Hill, Howard University, Washington, DC

Program: Center for Research on the Education of Students Placed At Risk (CRESPAR)

Funding Level: $2,361,301. Year 1 $382,389; Year 2 $438,552; Year 3 $431,004;
Year 4 $554,678; Year 5 $554,678

Project Period: 10/1/94–9/30/99

Project Design: The School, Family, and Community Partnerships Program aims to increase knowledge and improve practical strategies to help all schools develop, implement, and maintain research-based programs of partnerships. It is conducting two broad projects—one project to assist many state education agencies, school districts, and elementary, middle, and high schools which serve students placed at risk to meet the national education goal of establishing parental participation partnerships by the year 2000; and a second project on school-family-community efforts in violence prevention.

This program is guided by a unifying theory of overlapping spheres of influence on students' learning and development. This theory identifies ways that families, schools, and communities share responsibilities for children, and ways that positive and planned interactions provide important support for students. Evidence of the benefits of overlapping spheres of influence has been found for students and families at all grade levels and in many communities.

The study of school-family-community partnerships develops, evaluates, and disseminates processes and practices that every school can use to involve families and the community in children's education. It is studying the process by which schools "scale up" from one or a few teachers to a whole school; how school districts "scale up" from demonstration sites to a whole district; and how states "scale up" to organize, support, and guide partnerships in all districts and schools.

Educational Significance of the Study: A convincing research base now illuminates how and why school, family, and community connections are important for students' learning and development, and how these partnerships can be developed with every family, regardless of location (urban, suburban, or rural), family structure (single or married parents or other family forms), parent's education, or family background. Research is also beginning to show how community partnerships with schools and families can help strengthen these organizations and children's education. The partnership development project in this program will show how research-based approaches can help large numbers of schools, district, and states maintain productive school-family-community partnerships. It also will develop new approaches to university-school collaborations that continually expand the research base on school, family, and community partnerships.

Little is known, however, about how to use the assets of communities when conditions such as local and persistent violence pose dangers for children. The development of effective programs and processes to organize and mobilize school, family, and community assets to address violence prevention remains to be accomplished. The violence prevention project within this program of studies will contribute much to our understanding of how to build effective programs and practices in this area.

OERI Contact: Oliver Moles, 202–219–2211

Title of Study: Reaching the Goal for School, Family, and Community Partnerships (Project 6.1)

Principal Investigator(s): Joyce L. Epstein, Johns Hopkins University, Baltimore, MD

Program: CRESPAR Program 6: School, Family, and Community Partnerships

Funding Level: $1,530,512. Year 1 $275,146; Year 2 $287,005; Year 3 $292,307;
Year 4 $338,027; Year 5 $338,027

Project Period: 10/1/94–9/30/99

Project Design: Based on existing research and development knowledge, this study is conducting research and development on how to "scale-up" and help schools that serve students placed at risk to establish effective school, family, and community partnerships. It is studying how to:

- Expand the capacity building, program development, and use of effective practices from individual classroom and school implementations to district-wide and state-wide implementations; and

- Prepare all education professionals to work effectively with families and communities.

Researchers are evaluating the implementation of programs at district and state levels and in elementary, middle and high schools; conducting continuing research and development to provide a stronger knowledge base and more effective practices; and conducting a survey of colleges and universities to determine their use and readiness to redesign courses on school, family, and community partnerships.

The project is working with schools, districts, and states to develop and implement strategies needed to help schools reach the goal of establishing partnerships and using effective processes and practices to involve families and communities. To do this, the project has developed the National Network of Partnership Schools through which schools, districts, and state education agencies can develop and implement effective practices of family and community involvement, and has also developed and identified prototype practices for their use. In the process, schools and parents form Action Teams for School, Family, and Community Partnerships that assess their current practices of six types of parent involvement, survey the needs of their school, examine prototype practices and practices of other schools, develop a 3-year vision, and write a One Year Action Plan to implement a full program of school, family, and community partnerships. The project provides workshop training for schools, a newsletter, and technical assistance. It requires of participants the commitment of local resources to the project, an annual update on local activities, and participation in the project's national research program. Related studies are examining the characteristics and results of Partnership members' school activities.

In addition, a national survey of about 500 colleges of education is being conducted. It asks whether and how strongly colleges and universities are ready and willing to add topics of family involvement, community connections, and school, family, and community partnerships to the preparation of future teachers and administrators.

Several additional studies also are being conducted. One set of studies is investigating parent involvement in secondary education, based on a national longitudinal study (National Education Longitudinal Study, 1988 Base Year and Follow up Surveys). This includes a study of changes in the intensity and forms that parent involvement take between 8th and 12th grade. Other studies examine the role of school, family, and community supports on the academic achievement of African-American youth. The project also is developing new approaches to university-school collaborations that continually expand the research base on school, family, and community partnerships with data contributed by schools, districts, and states in the National Network.

Educational Significance of the Study: The Partnership project has been extended to all areas of Baltimore and now includes over 800 schools nationwide, 80 districts, and 9 states. The national training workshops and other services provide strong support for schools as they develop and implement partnership programs tailored to their own situations and needs. Parent involvement has been shown from much research to be a powerful factor in children's learning; this project is helping many schools to strengthen links with families and communities, and focusing the involvement of parents on children's education.

The survey of colleges of education will help determine their readiness to add partnerships to their required and elective courses so as better to prepare teachers and administrators for working with families. Few colleges have required courses, or support such preparation, for all educational professionals at present. Courses on partnerships are also being developed for use in schools of education.

The continuing research and development will help improve partnership process and practices especially in the upper grades where much less is known about how to involve families and where parent participation falls off for various reasons.

Status of Study and Products: A manual on developing programs for schools in the National Network of Partnership Schools was published commercially for wider use. Newsletters are issued regularly and many research reports on parent and community involvement have been issued.

OERI Contact: Oliver Moles, 202–219–2211

Title of Study: SAFE START: A Culturally-Based Comprehensive Violence Prevention Intervention for Elementary Schools (Project 6.2)

Principal Investigator(s): Hope Hill, Howard University, Washington, DC

Program: CRESPAR Program 6: School, Family, and Community Partnerships

Funding Level: $815,790. Year 1 $107,243; Year 2 $151,547; Year 3 $138,698;
Year 4 $209,151; Year 5 $209,151

Project Period: 10/1/94–9/30/99

Project Design: This project is developing and evaluating a comprehensive school-based violence prevention program in an elementary school in Washington DC where many children are exposed to community violence. This intervention is designed to affect the climate of the school, and develop protective mechanisms among individual children, families, and communities.

SAFE START focuses on critical areas such as: targeting children in school and after-school programs; building a parent empowerment network; providing training and consultation to teachers and other school personnel; and developing connections to key community persons, resources, and supports.

The following research questions are being addressed:

- Do children in the program demonstrate significant changes in their intentions to engage in violence and their actual engagement in interpersonal violence?
- What combination of strategies is effective in developing social skills, problem solving skills, a prosocial, antiviolence value orientation and a positive view of one's own ethnicity?
- Do parents in the empowerment network increase their sense of empowerment and ability to reduce violence at home and in the community?
- Are teachers and school personnel able to recognize symptoms of exposure to violence and trauma and respond appropriately?
- Do teachers and principals report changes in the climate of the schools regarding violence following the intervention?
- How can community groups work effectively with children, families, and schools on issues of violence prevention?

Elementary schools with a high level of community violence and similar socioeconomic status have been matched and one given the intervention. Two classrooms of third-graders and two of fourth-graders in each school are participating in the project for several years with information collected from them and their parents at the beginning, during and at the end of this time. Focus groups with school staff, parents, and children have provided critical information for developing the intervention. A violence prevention curriculum has also been developed.

Educational Significance of the Study: There is a high level of school violence and fear of school violence among youth. School-based strategies are needed in urban and other areas to address issues in violence-prone communities that affect children's learning, development of their talent, and their commitment to school and the role of student. We know little about what types of school, family, and community initiatives are most effective in reducing and preventing school violence and interpersonal violence among youth in high-risk environments. SAFE START as an intervention program is working to address these concerns. A comprehensive approach such as this seems important, and the evaluation of SAFE START will assess how well this comprehensive approach reduces youth violence.

Status of Study and Products: A report on the implementation of SAFE START has been produced. A definitive report will be issued at the end of the study.

OERI Contact: Oliver Moles, 202–219–2211

Title of Study: Systemic and Policy-Related Studies (CRESPAR Program 7)

Principal Investigator(s): Samuel C. Stringfield, Johns Hopkins University, Baltimore, MD; and Velma LaPointe, Howard University, Washington, DC

Program: Center for Research on the Education of Students Placed At Risk (CRESPAR)

Funding Level: $3,301,566. Year 1 $566,103; Year 2 $608,076; Year 3 $689,661; Year 4 $718,863; Year 5 $718,863

Project Period: 10/1/94–9/30/99

Project Design: Data from the National Assessment of Educational Progress indicate that the average achievement levels of U.S. students have been essentially flat over the last 20 years. Yet America has many "promising" education programs, and has hundreds of thousands of hard-working, well intentioned educators serving America's at-risk students. Education practitioners and researchers have argued that a large part of our failure to actualize this potential derives from our failure to mount lasting system-wide education reforms. Enduring system-wide education reform means that improvement takes place at all levels—classroom, school, district, and state.

It is not enough for curriculum developers to have potentially effective programs, and for teachers and principals to be willing to work long hours. Long term, sustained school improvement requires a coordinated effort among parents, teachers, principals, central administrators, and often external development teams. Reforms must work by simultaneously increasing coherence in the system through centralized coordination and increasing professional discretion at the school site. Moreover, for school reform to succeed, entire systems must work to heighten the reliability of schooling.

The aim of the Systemic and Policy-Related Studies Program is to study and explain how Title I can best support school reform, how outstanding schools serving poor and minority children can be supported and replicated, and how effective programs can be "scaled up" (i.e., making it capable for successful school-wide programs to be transported to and adapted by other schools). The program is built around three definitive studies. The first study consists of a multilevel series of studies on the effectiveness of Title I, the largest federal commitment to K–12 education. Title I provides long-term, systemic supports for improving schools serving students placed at risk. Over a 5-year period, work undertaken in this program will examine the effects of schools, districts, states, and the federal government efforts to improve the achievement of students placed at risk. Special interest is on multilevel attempts to assist schools that are not performing adequately on assessments under the new Title I guidelines.

The second study examines exemplary schools and programs, and their systemic supports. Having identified schools serving many children placed at risk that have stable histories of obtaining unusually high levels of achievement, this effort is gathering 3 years of student, classroom, school, and system data to find common characteristics at each level.

The third study focuses on how and in what ways effective school-wide programs can be easily brought to and adapted by other schools. This third study area examines factors that help to establish local networks of like-minded schools, the barriers and enabling factors of school-to-school mentoring, types of communication that most support the move from innovation to institutionalization, quality control, and the roles of districts and district coordinators.

Educational Significance of the Study: Collectively, these studies are designed to greatly enhance our ability to systemically support local educators in their efforts to successfully teach all children. The Title I studies will provide a better understanding of how Title I actually works at various education levels. The studies will also provide practical advice to teachers and administrators on how to get the greatest benefit for their Title I dollars. The study focusing on exemplary or outstanding schools will provide answers to such questions as: What are the essential elements needed to create an outstanding school? Can the success of these schools be "scaled up"? What kinds of system-wide support do these schools need to develop and sustain themselves? Results from studies on "scaling up" will provide evidence on the best method of providing successful and proven research-based whole school programs to other schools.

OERI Contact: Ron Pedone, 202–219–2247

Title of Study: Program Improvement in Title I: The Differential Effects of Multilevel Involvement (Project 7.1)

Principal Investigator(s): Samuel C. Stringfield, Johns Hopkins University, Baltimore, MD

Program: CRESPAR Program 7: Systemic and Policy-Related Studies

Funding Level: $493,289. Year 1 $136,874; Year 2 $72,952; Year 3 $84,683; Year 4 $99,390; Year 5 $99,390

Project Period: 10/1/94–9/30/99

Project Design: Many policy analysts, researchers, and practitioners regard the "program improvement" mandates in the 1988 Hawkins-Stafford Amendments as among the most significant changes in the first 25 years of the Chapter 1/Title I. The program improvement mandates and the need for greater accountability have been strengthened in the current Title I law. These portions of the law are designed to focus school, district, and state level resources on improving schools serving students placed at risk that are failing to meet accountability standards.

And yet, there have been no long-term studies on the effects of work by schools, districts, states, and the federal government to improve those schools targeted for program improvement. There has been little research on the extent to which the changes that schools make remain after the schools "get out of program improvement."

This study addresses the following questions:

- Is Title I program improvement working? If yes, for which schools and students?
- What school, district, and systemic characteristics make program improvement work more effectively in some contexts than others? How can those characteristics be reproduced in more schools and districts?
- What will be the effects of changes in the program improvement provisions of the new version of Title I and in the Department of Education's implementation guidelines?

Information is being collected over three time periods. In Fall/Winter 1997, four states implementing program improvement are being visited. The state Title I directors, and staff in selected Title I school districts and schools in these states are being interviewed. In Spring 1998, all 53 state Title I directors will be surveyed as well as all schools located in the four visited states. In addition to state and local officials, information on Title I also is being collected from key federal officials. Revisits also take place with the school districts and schools implementing program improvement. In Spring 1999, school districts and schools in the four states will be revisited again and state and federal officials will also be reinterviewed. This longitudinal design will provide valuable data on Title I program changes.

Educational Significance of the Study: Title I is the federal government's largest single commitment to elementary and secondary education. Since this study will be completed in 1999, it will be able to provide the Congress with empirically based findings and suggestions to consider during

Title I's planned 1999 reauthorization. Results from the study will also give detailed information about the school, school district, and common system-wide characteristics (e.g., teacher hiring policies, curricula designs, attendance rules and discipline standards, and academic requirements) that make program improvement work more effectively.

Status of Study and Products: Two monographs have been produced related to Title I school improvements. A final report on the long-term effects of program improvement will be available in Fall 1999.

OERI Contact: Ron Pedone, 202–219–2247

Title of Study: Super Schools Study (Project 7.2a)

Principal Investigator(s): Beverly Cole-Henderson and Velma LaPointe, Howard University, Washington, DC

Program: CRESPAR Program 7: Systemic and Policy-Related Studies

Funding Level: $223,830. Year 1 $57,362; Year 2 $22,803; Year 3 $32,729; Year 4 $55,468; Year 5 $55,468

Project Period: 10/1/94–9/30/99

Project Design: Numerous successful public schools exist that serve African-American children and other culturally diverse groups of students who are poor. These schools are not only on par with counterpart white schools but often lead their respective districts on most traditional indicators of school success. Their children, their educators, and the supports they have generated can teach us a great deal about reinforcing and increasing the number of schools that are succeeding against the odds. These schools need to be more carefully and systematically documented. The research questions include:

- How have these and other effective schools sustained the level of success that they have enjoyed over several years?
- What factors and characteristics are essential to creating a "super" school? Can the success of these schools be "scaled up" for other populations of children and youth who need it?
- To what extent have super schools been able to develop unusual levels of systemic support? Alternatively, how have super schools been able to buffer themselves against the potential negative impacts of traditional school system demands?
- How are these schools able to hold high standards for student success, and how do these schools capitalize on their resilience and cultural integrity?

This study focuses on high achieving public elementary, middle, and secondary schools serving primarily low-income African-American students. A list of "super" schools around the country is being developed. From that list, a sample of administrators from selected schools is being surveyed. In addition, a limited number of schools are being interviewed in depth to provide more insight into these high achieving schools. Interviews with student, teacher, and parent participants, ethnographic descriptions of classroom, school, and community settings, and other environmental factors are being conducted. Specific areas of interest include student gain scores in reading and mathematics, attendance, suspension/expulsion rates, discipline referrals, graduation and drop-out rates, progress in core courses, extra curricula activities, and parent involvement.

Educational Significance of the Study: Segregation remains a fact of life for the majority of poor African-American and Hispanic children. Given the enduring nature of these societal inequalities, public schools must provide a high quality education that enables poor minority children to achieve excellence under conditions that are separate and often unequal. Results from this study will provide a better understanding of what makes for and sustains successful schools for low-income African-

American students. In particular, it attempts to answer the following: What works? Where? Under what conditions, and why?

Status of Study and Products: An annotated bibliography on successful schools and their characteristics has been prepared. Survey questionnaires, observation protocols, and focus group questions are being finalized. A detailed report will be released at the end of the study.

OERI Contact: Ron Pedone, 202–219–2247

Title of Study: A 10 Year Follow-up of 16 Schools Participating in the Louisiana School Effectiveness Study (Project 7.2b)

Principal Investigator(s): Samuel C. Stringfield, Johns Hopkins University, Baltimore, MD

Program: Program 7: Systemic and Policy-Related Studies

Funding Level: $242,505. Year 1 $45,158; Year 2 $15,484; Year 3 $80,187; Year 4 $50,838; Year 5 $50,838

Project Period: 10/1/94–03/31/98

Project Design: Almost all of the studies on school stability and change are of 1 to 3 years duration. These stand in stark contrast to the literature and experience in practice which suggests that successful school restructuring takes 5–10 years. Studies of limited duration may obscure both "late bloomers" and successes that have lapsed. This study examines sets of schools that have been observed in detail in two previous multiyear studies. The major research question is:

- What are the school characteristics that influence successful school restructuring and lead to long-term school stability?

Researchers participating in the Louisiana School Effectiveness Study visited 16 carefully chosen schools during the Fall of 1984, the Spring of 1985, the Fall of 1989, and the Spring of 1990. The schools reflect the economic and racial diversity of Louisiana, and reflect differing levels of academic achievement. The 1989–90 data revealed a mixed picture of stability and occasional change. Some schools previously classified as ineffective were improving, some more effective schools had declined, and several schools remained almost exactly as before.

The existing cases were used as a base for a return to all 16 schools during 1996. Since the 1989–90 observation cycle, several of the schools' districts have been involved in systemic efforts at school restructuring. This study collected and is analyzing data on the kinds of relationships between the teachers, schools, and supporting institutions at the classroom, school, and district levels. Low inference observational data and achievement data also are being analyzed.

In addition, data on the relationships between Title I and overall school processes and effects were examined in particular detail. Indicators of systemic support for school restructuring were examined to determine their relation to stability and change in each school.

Educational Significance of the Study: By observing schools that have provided previous case studies on stability and change, we can gain insights into the conditions that facilitate or cripple long-term efforts to institutionalize school improvement.

Status of Study and Products: During the 1995–96 school year, all quantitative and qualitative student, classroom, and school-level data were gathered in the 16 schools. System-level interviews were conducted in the Spring of 1997. An annotated bibliography on successful schools and their characteristics has been prepared. In preparation is a report on the long-term effects of systemic stability and change efforts in the schools studied. A definitive report will be released at the end of the study.

OERI Contact: Ron Pedone, 202–219–2247

Title of Study: The Long-Term Effects of Implementing "Promising Programs" (Project 7.2c)

Principal Investigator(s): Samuel C. Stringfield, Johns Hopkins University, Baltimore, MD

Program: CRESPAR Program 7: Systemic and Policy-Related Studies

Funding Level: $187,359. Year 1 $0; Year 2 $0; Year 3 $85,683; Year 4 $50,838;
Year 5 $50,838

Project Period: 12/1/96–11/30/99

Project Design: Detailed data have been gathered on 25 schools engaged in a variety of "promising program" implementations over a 3-year period from 1990 through 1992. Schools were implementing such programs as Reading Recovery, the Comer School Development Program, the Paideia program, Success for All, peer tutoring, and forms of computer assisted instruction. Over the 3-year study, some schools struggled with initial implementation, while others moved strongly forward toward full institutionalization of program components. The research questions addressed by this study include:

- How do successful or promising school programs come about or happen?
- What specific conditions and levels of support are necessary for these programs to be "institutionalized" in schools?

During the 1997 and 1999 school years, this study is conducting case studies of 10 of the schools—5 that have been most successful at implementing their particular programs and 5 that have been less successful. Classroom observations and teacher, school, district, and program developer interviews are being conducted on the levels of institutional support (peers, school, district, program) required to reach full acceptance and adoption of a promising program. Also, specific conditions required to fully incorporate a promising program are being examined—for example, new teachers entering a Coalition of Essential Schools school must be carefully inducted but, after several years, the computers in a Computer Assisted Instructional laboratory must be replaced. Has the school and district made allowances for those requirements? If yes, how? If not, why not, and with what effects?

In addition to observations and interviews with staff, students also are observed and interviewed. Twelve students at six schools have been selected from the 1990–92 sample. Six of the students are from urban schools, and six from suburban-rural. These students are being carefully followed as they progress through upper elementary, middle, and high school. Allowing for normal attrition, this should result in following 10 of the students through 1999. Visits to their schools are being made in 1997 and 1999.

Educational Significance of the Study: Details of the children's daily school experiences, plus interviews with the children and their parents, have been gathered over three school years. If these students remain on track, they will graduate from high school in 2000 and 2002, respectively. These students can provide a unique set of data about the successes and failures at implementing meaningful reforms for children placed at risk in American education. Also, the longitudinal case studies of at-risk students who early in their school careers were involved in promising programs will provide an ongoing human "report card" of the progress being made toward achieving the national education goals, and of some of the hurdles still standing in the way.

Status of Study and Products: Reports on the conditions leading to long-term institutionalization of promising programs, and on sustaining promising programs and restructuring efforts are planned for release in 1999.

OERI Contact: Ron Pedone, 202-219-2247

Title of Study: Building Local Support Networks to Support Scaling-Up of a Successful School Change Model (Project 7.3a)

Principal Investigator(s): Robert E. Slavin and Robert Cooper, Johns Hopkins University, Baltimore, MD

Program: CRESPAR Program 7: Systemic and Policy-Related Studies

Funding Level: $656,704. Year 1 $0; Year 2 $46,336; Year 3 $0; Year 4 $305,224; Year 5 $305,224

Project Period: 10/1/94–9/30/99

Project Design: This study examines the process of "scaling-up" Success for All, a comprehensive model or program of reform for elementary schools that serve many at-risk children. The aim is to study the process of change and to experiment with alternative means of building local and national support networks for this program. Success for All is currently operating in over 750 schools in 37 states. It is supported by school districts and schools themselves, mostly with reallocations of Title I and special education resources.

Two scale-up models are being tried. One model utilizes regional training sites; the other establishes and uses district and regional networks in which the staffs of experienced Success for All schools become "mentors" for staffs of new schools in their own regions.

The study is taking place in three regional training sites, in six districts that are forming district networks to support program expansion, and in four regions that are establishing mentoring networks. In each case, the study addresses the following questions:

- What circumstances lead to the establishment of local networks?
- What are the barriers to school-to-school mentoring? How and in what ways do they occur?
- Do "mentor" schools benefit from their efforts? How and under what conditions?

Data collection primarily involve interviews of key staff—principals, facilitators, teachers, district officials involved in the program, and (when appropriate) state department, university, or other staff beyond the district who are engaged in local assistance networks. In all, approximately 100 individuals are being interviewed each year to learn about the effectiveness of alternative scale-up strategies and the experiences educators have in forming and participating in local support networks, mentoring, and being mentored in the adoption and refinement of a schoolwide change progress.

Educational Significance of the Study: There is an important debate under way about how school reform can take place on a broad scale. Two contrasting models of school change are being put forth under the title of systemic reform. One view of systemic reform focuses on changing the major elements of the education system—performance standards, assessments, accountability, curriculum frameworks, opportunity to learn standards, and state and local governance structures. The attempt

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is to create incentives and provide resources to enable schools to reform themselves. The other view on systemic reform accepts the need for changes in federal, state, and local policies, but concentrates on building comprehensive reforms school by school.

These and other reformers believe that thoroughgoing changes in school organization and instruction can and must be worked out in each school with the assistance of networks of like-minded colleagues and professional development experts. The school-by-school approach is conceptually appealing, but there are few examples of it working on a large scale. National reform networks have been successful in introducing such strategies as process writing, Reading Recovery, and cooperative learning into thousands of schools, but whole-school reform strategies have been slower to enter wide-scale practice.

If the school-by-school approach to systemic reform is to complement or be a viable alternative to a regulation-based strategy, there must be clear evidence that research-based whole school reform models can be used effectively on a broad scale, and school change programs can be "scaled up" without losing their integrity and effectiveness. This study will provide needed information on what approach works best in scaling up Success for All.

Status of Study and Products: This study has produced a series of reports on the development of local assistance networks and guides to establish local Success for All networks. More of these reports are planned over the next few years.

OERI Contact: Ron Pedone, 202–219–2247

Title of Study: Scaling-Up the New American Schools: An Evaluation of "The 21st Century Schools Exposition" (Project 7.3b)

Principal Investigator(s): Samuel C. Stringfield, Johns Hopkins University, Baltimore, MD

Program: CRESPAR Program 7: Systemic and Policy-Related Studies

Funding Level: $974,619. Year 1 $9,135; Year 2 $178,371; Year 3 $238,543; Year 4 $274,285; Year 5 $274,285

Project Period: 10/1/94–9/30/99

Project Design: This study is a longitudinal examination of "New American Schools" and other restructuring designs' scale-up efforts in Memphis, Tennessee, a city experiencing high levels of poverty. Over the last 10 years, one of the most promising developments in school restructuring has been the funding of nine "21st Century Schools" development teams by the New American Schools Development Corporation (NASDC). Beginning on a limited basis in the Fall of 1994 and on a larger scale during the 1995–96 school year, the Memphis City Schools sponsored the "21st Century Schools Exposition." This 5-year effort showcases six of the more promising "New American Schools" projects under comparable implementation conditions. The projects include ATLAS Schools, Audrey Cohen College, Co-NECT, Expeditionary Learning/Outward Bound, Modern Red Schoolhouse, and Roots and Wings. Each project is being implemented in at least one site serving a highly disadvantaged community. In addition, some schools are implementing the Accelerated Schools or the Paideia designs.

Information is being collected by researchers attending school district meetings where the various models are explained to school teams. The researchers are documenting the processes by which teachers and principals, operating as school teams, choose to participate in the exposition and choose particular projects. Archival and questionnaire based data are being gathered on all students, teachers, and schools. Researchers are also taking extensive field notes on the challenges faced and progress made by schools attempting to implement various "21st Century Schools" projects. Outcome data include data from local sources (e.g., student and teacher attendance rates, scores on locally administered tests), as well as portfolio assessments and attitude and achievement measures.

Educational Significance of the Study: One of the most successful approaches to accelerate school reform is to "scale up" and transport proven school reform models to other schools. The New American Schools Development Corporation's "21st Century Schools" model shows great potential in reforming and improving schools in highly distressed communities. Moreover, many school administrators would like to implement the 21st Century Schools model in their schools.

However, there is little—if any—solid research-based information on what it takes to "scale up" effectively this school reform model. This study provides a unique opportunity to study the scale-up-ability and effectiveness of Memphis' "21st Century schools" under comparable conditions. It also serves as a contrast to the "Success for All" scale-up study (Project 7.3a).

Status of Study and Products: Seven articles on the Memphis restructuring initiative are included in a special issue of the journal *School Effectiveness and Improvement* and two articles were published in the May 1998 issue of *Education and Urban Society.* Additional reports are in preparation that relate to innovative plans for school restructuring, scaling up issues, and the "hows" and "whys" of schools choosing to participate in externally developed restructuring designs. A final report on the 21st Century Exposition will be issued in 1999.

OERI Contact: Ron Pedone, 202–219–2247

Title of Study: International Issues in Schooling for Students Placed At Risk (Project 7.4)

Principal Investigator(s): Samuel C. Stringfield, Johns Hopkins University, Baltimore, MD

Program: CRESPAR Program 7: Systemic and Policy-Related Studies

Funding Level: $450,725. Year 1 $46,607; Year 2 $106,532; Year 3 $0; Year 4 $148,793; Year 5 $148,793

Project Period: 10/1/94–11/30/96

Project Design: United States students generally, and students placed at risk in particular, are unlikely to reach the goal of becoming "first in the world in math and sciences by the year 2000" unless major innovations take place. The International Assessment of Educational Progress found that the average United States 13-year-old scored behind his peers in every other country measured, except Spain and Jordan. On average, U.S. students scored 2 full years behind students in Taiwan.

This study is designed to explore two questions:

- What is the gap between achievements of students from higher vs. lower affluence communities in the various nations?
- What practical suggestions can United States educators derive from international studies that will help them improve schools?

To address these questions, researchers are analyzing data gathered for the International School Effectiveness Research Programme (ISERP). ISERP, a long-term, shared effort by teams of researchers in nine countries (Australia, Canada, Great Britain, Hong Kong, Ireland, The Netherlands, Norway, Taiwan, and the United States), provides quantitative data plus detailed case studies of schools serving economically disadvantaged vs. more affluent communities. Researchers are analyzing ISERP's detailed school, classroom, and student background and performance data to determine what student and community background characteristics as well as classroom and school conditions contribute to high standards and effective schools for at-risk students.

Educational Significance of the Study: Many educators, policymakers, and researchers are convinced that other nations have much to teach American educators about students placed at risk. The education reform movement has been and continues to be greatly influenced by "how well American students rank against students from other countries." Results from this study will provide a wealth of information on student, classroom, school, and community conditions that contribute to high standards and effective schools for at-risk students. The study will highlight differences and similarities for student and school success between America and other countries.

Status of Study and Products: Reports are being prepared on: government support and the nature of schooling offered to students placed at-risk in different countries; and comparisons of schooling provided to middle- and lower-socioeconomic status students in other nations.

OERI Contact: Ron Pedone, 202–219–2247

Title of Study: Addressing Systemic Issues Raised by High Rates of Student Mobility (Project 7.5)

Principal Investigator(s): Anthony S. Bryk and David Kerbow, University of Chicago, IL

Program: CRESPAR Program 7: Systemic and Policy-Related Studies

Funding Level: $391,279. Year 1 $106,789; Year 2 $54,929; Year 3 $111,259;
Year 4 $59,151; Year 5 $59,151

Project Period: 7/1/9–9/30/99

Project Design: The objectives of this study are to:

- Review available strategies at the district, school, and classroom level that attempt to reduce residential mobility or assist the student to lessen the negative impact of mobility, and

- Examine the effects of mobility in a large urban school district.

The educational consequences of families changing residence are both particular to students and broadly intrusive to the classroom and school. Changing schools is almost certain to create some disjuncture in children's learning experience. Difficulties may be accentuated if students enter classrooms that are at a decidedly different point in the curriculum than their previous school. For classrooms, continuity of expectations and instructional routines are disrupted. For the school, planning subject emphases across grades becomes especially problematic.

Researchers are conducting case studies of four Chicago schools to study the effects of mobility on student achievement. Schools are selected based on their demographic characteristics and on the pace of their curriculum. Teachers are interviewed on their strategies for integrating student newcomers and for managing the classroom in order to preserve continuity of instruction. This will allow comparison for how schools cope with high student mobility. In addition, classrooms of students are being observed and followed over one and one-half years, during which time experiences of stable as well as mobile students under different school organizational conditions are evaluated.

Educational Significance of the Study: The complicated issues associated with mobility have far reaching implications for systemic reform efforts that focus on local school accountability. In an unstable context, even improving schools lose their accomplishments as students transfer, and mobile students forfeit the benefit of continuity of school services. Thus, not only does mobility impact individual students and schools, it has consequences for the systemic changes intended by reform policy.

By following individual students, much will be learned about family reasons for changing schools, what information a family uses to arrive at a decision, and the level of support within the family for making the transition to another school. At the end of the study a set of strategies to reduce the impact of mobility on student achievement and adjustment will be identified and the impact of mobility on a range of school reform efforts will be documented.

Status of Study and Products: A research/policy report, *Patterns of Urban Student Mobility and Local School Reform* is available. This report examines the causes and patterns of student mobility as well as its effects on student learning and classroom instruction more generally. Reports are also in preparation or being planned that address a range of student mobility issues—including a report on overcoming mobility as an obstacle to education reform. A final study report will be available in December 1999.

OERI Contact: Ron Pedone, 202–219–2247

Field-Initiated Studies (FIS)

Title of Study: Providing Opportunities for English Learners to Show What They Know and Can Do: Assessment Strategies

Principal Investigator(s): Anne Hafner, California State University, Los Angeles, CA

Program: Field-Initiated Studies (FIS)

Funding Level: $161,920. Year 1 $68,765; Year 2 $93,155

Project Period: 10/1/97–9/30/99

Project Design: Recent reform initiatives call for instructional and assessment innovation in support of high standards to raise the achievement of all students, including students with limited English proficiency (LEP). Historically, however, LEP students have been largely excluded from testing programs because their lack of English proficiency mitigates against an accurate assessment of their true achievement. One way of increasing the number of tested LEP students and their performance is to modify the testing situation to accommodate their perceived disadvantage. Although the use of accommodations for disabled students has been well researched and is commonly accepted, research on using accommodations with LEP students is sparse. More studies are needed on this critical aspect of education reform.

This project examines the use of assessment accommodations and their effects on LEP student performance and test validity. Specifically, the project will ascertain:

- Whether the scores of LEP students tested with accommodations are higher than those tested under standard conditions;
- Whether accommodations work equally well with different types of test items;
- What kind of accommodations most help LEP students increase their test performance; and
- Whether or not testing under accommodations measures the same concepts as those measured under standard testing conditions.

Three types of accommodations will be examined with 1,200 fourth-graders in 48 classrooms in 4 states (4 schools per state and 3 classes per school) and 450 seventh-graders in 18 classrooms in 4 states (2 schools per state and 2 classes per school, plus 2 additional classes in California). The accommodations are: providing extra test time; presenting test instructions in the native language and English; and giving oral clarifications of test directions in English. A mathematics test composed of multiple-choice, constructed response, and problem-solving performance items will be used in accommodated and standard testing procedure.

Educational Significance of the Study: The results of this study will provide information on how to help LEP students demonstrate their true achievement through viable test accommodations. Moreover, data of this sort will result in a greater inclusion of LEP students in testing samples. This in turn will lead to a more accurate assessment of the performance of this nation's students on critical achievement measures.

Status of Study and Products: The grantee completed the research design, including data analysis, and has recruited schools to participate in the study. A report of research findings will be provided at the completion of the study.

OERI Contact: Ok-choon Park, 202–208–3951

Title of Study: Field-Initiated Study of the Cambridge (MA) Integrated Transitional Bilingual Education Project

Principal Investigator(s): Mary Cazabon, Cambridge Public Schools, Cambridge, MA

Program: Field-Initiated Studies (FIS)

Funding Level: $649,866. Year 1 $150,016; Year 2 $262,677; Year 3 $237,173

Project Period: 9/1/96–8/31/99

Project Design: Like an increasingly larger number of school districts, the Cambridge Public School system has experienced a dramatic increase in the number of limited-English proficient (LEP) students entering its schools. And, like LEP students in other districts, many in the Cambridge contingent perform at alarmingly low academic achievement levels. In 1995, for example, LEP third- and sixth-grade students were, respectively, two- and three- to four-grade levels below their English proficient peers in English reading. Accordingly, Cambridge officials launched a series of research initiatives both to understand the exact nature of the problems facing LEP students, their teachers, and the schools that serve them and to develop an effective instructional approach to better serve LEP students.

The focus of this research is the Integrated Bilingual Program Model, a program of instruction that matches every bilingual class with a mainstream class. Children in both classes are instructed together for 2 hours a day focusing on science and math activities and project-based cross-curricular activities. Cambridge developed the program for populations of diverse LEP students. The project examines:

- The bilingual proficiency and English reading and math skills of the program's LEP participants over a number of years (grades K–8);
- The most effective instructional strategies for these students across grades, subjects, and classrooms; and
- Student progress in the program's after school enrichment component.

Four cohorts of students in Cambridge's Chinese, Haitian, Creole, Korean, Portuguese, and Spanish Integrated Bilingual Programs will be followed for 3 years beginning in the 1996–97 school year. Cohort A were kindergartners in 1996–97, Cohort B were second-graders, Cohort C were fourth-graders and Cohort D were sixth-graders. The project also includes a group of students in Cambridge's English as a Second Language program and mainstream classrooms for further comparisons on significant student and instructional variables.

Data will be collected on changes in LEP students' proficiency in English and their native languages and their academic achievement in English reading and mathematics via systematic observations of classroom-level instruction and standardized tests. A series of student language attitude scales will be administered, as well as a parental attitude questionnaire and a series of indepth teacher interviews. A comprehensive portfolio assessment of fourth-grade students participating in the after school enrichment program component will also be developed and analyzed.

Educational Significance of the Study: Through the collection of longitudinal data across a number of grades, the study findings will contribute to an increased understanding of the critical steps needed to implement, manage, and sustain a comprehensive bilingual program. The data will provide new insights into effective instructional strategies for at-risk LEP students.

Status of Study and Products: Annual performance reports indicate excellent progress in the implementation of the study design. A definitive report will be issued at the end of the study. A final project objective is to disseminate the findings and effective instructional models.

OERI Contact: Gilbert N. Garcia, 202–219–2144

Title of Study: Assumptions, Actions, and Student Performance

Principal Investigator(s): H. Dickson Corbett, independent consultant, PA

Program: Field-Initiated Studies (FIS)

Funding Level: $348,150. Year 1 $115,100; Year 2 $114,025; Year 3 $119,025

Project Period: 9/1/96–8/31/99

Project Design: This study will examine the assumptions urban teachers and students have about students as learners, the ways in which they act on their assumptions, and the effects these assumptions and actions have on student performance. Both quantitative and qualitative information based on interviews with teachers, classroom observations and student record analyses will be collected in one elementary, one middle, and one high school in each of two school districts. Interview topics will cover student strengths and weaknesses, cultural backgrounds, unrealized potential, motivation, and resilience. Teachers will be also be asked how they decide on instructional content, instructional strategies and assessment practices for their students. Feedback session with participants are also part of the study.

Each school in the study serves a significant number of minority students and each is wrestling with problems associated with urban education (e.g., scarce resources, low-test scores, and depressed economic conditions).

The research will address the following questions:

- What are the assumptions that teachers and students hold about the strengths and weaknesses of students' learning capabilities, especially in terms of cultural differences, unrecognized abilities, self-motivation, and resilience in the face of adversity?
- To what extent do these assumptions affect the kinds of decisions that teachers make about curriculum content, teaching and student assessment?
- What are the effects of these assumptions and decisions on the educational performance of urban students (i.e., their grades, homework habits, discipline, attendance, promotions, and standardized achievement test scores)?

Educational Significance of the Study: Too often, urban school children fail to achieve at levels that will make them productive members of this society. Too often this failure is ascribed to their lack of 'readiness to learn' their membership in nonmajority cultural or ethnic groups, or their lack of motivation. However, according to recent theories of intelligence, learning, and instruction, urban learners are not culturally deprived, or lack ability, nor unmotivated. In short, the problem does not lie with the children, but with the schools. Much of what is taught and how it is taught is based upon teachers' perceptions of students' abilities. However, these perceptions may be based on misunderstandings of the experiences, capabilities, behaviors, and potential that urban learners bring to the classroom. This study will provide needed insight into the way adult perceptions affect urban learners by focusing on the children's cultural backgrounds, their unique strengths and talents, and the importance of tapping into their intrinsic motivation and effort, which, taken together, fosters their resilience and likelihood of leading productive, successful lives.

Status of Study and Products: The study will produce two main products: a classroom activities anthology that will translate successes with urban students into lessons; and a second document that will be a frank discussion, with concrete examples, of how district context hinders and/or facilitates the translation of assumptions into action. This second product will also address the relationship between formal and informal policies and what must be done for policies to be truly "urban learner centered."

OERI Contact: Susan Talley, 202–219–2129

Title of Study: Long-Term Benefits of Intensive Early Education for Impoverished Children

Principal Investigator(s): Frances Campbell, University of North Carolina, Frank Porter Graham Child Development Center, NC

Program: Field-Initiated Studies (FIS)

Funding Level: $555,486. Year 1 $160,011; Year 2 $165,707; Year 3 $229,768

Project Period: 9/1/96–8/31/99

Project Design: This study will assess the long-term outcomes of the Abecedarian Project, the most intensive early educational intervention program yet provided for children from poor households.

The Abecedarian Project compared the long-term educational achievement of infants from low-income families enrolled in a preschool educational program with comparable infants who were not enrolled. The study's sample (98 percent African-American) consisted of 111 children born into 109 low-income families. The children were considered at risk of educational failure because of less than satisfactory intellectual development and because of conditions associated with poverty. Data has been collected on the youngsters for a number of years. One hundred and five of the original subjects participated in the last follow-up at age 15.

Children in both groups received social services and nutritional intervention in a child care center from infancy to age five. A special curriculum was developed for the Abecedarian Preschool group which focused on cognitive and fine motor development, social and adaptive skills, language, and gross motor skills with the primary emphasis on language development. Parents served on an advisory board to the preschool and attended periodic parent meetings and social events. At every age of assessment, from 18 to 54 months, children who attended the preschool scored significantly higher than those who did not on measures of cognitive development.

This project will locate and contact the Abecedarian children as they reach age 21 and collect new data through extensive interviews and available documentation. For example, this study will gather previously uncollected delinquency and crime data. An indepth analysis of the data will address these questions:

- Can changing and enriching the surroundings of poor children make a difference in their intelligenceand learning potential and is that gain sustained over time?
- Is it possible to pinpoint the factors that make a sustained improvement in personal competence and lifelong outcomes?

The project will also fund two meetings of a panel of nationally recognized experts to advise on analysis and interpretation of findings, and produce a professionally produced brief report of the findings suitable for dissemination to agency heads, legislators, and educators.

Educational Significance of the Study: Billions are spent to improve the educational performance of poor children, most of it after they enter school. The effects of these kinds of interventions are often short-lived and may disappear after grade three. Very early intervention, however, holds tremendous promise as demonstrated in earlier follow-ups of the Abecedarian Project and other studies such as the Perry Preschool study. This research provides further information on the effects of early interventions, even into adulthood, and will further pinpoint the factors that bring about academic and personal competence for poor, at-risk children.

Status of Study and Products: Annual performance reports state that there is substantial progress toward meeting goals and objectives. A paper was presented at the American Orthopsychiatric Association describing the effects of early intervention. Seminars and workshops related to the study have also occurred.

OERI Contact: Carol Sue Fromboluti, 202–219–1672

Title of Study: Literacy Development in Adolescent English Language Learners

Principal Investigator(s): Anna U. Chamot, George Washington University, Washington, DC

Program: Field-Initiated Studies (FIS)

Funding Level: $643,915. Year 1 $214,999; Year 2 $214,617; Year 3 $214,299

Project Period: 9/15/97–9/14/00

Project Design: This study compares two instructional approaches for teaching English literacy to low-literacy, limited-English proficient adolescents. One group of students will be taught in English and Spanish (bilingual instruction). A comparable group of students will receive instruction in English only (monolingual instruction). After 1 academic year, the two groups will be compared on: their English reading and writing skills; their feelings of self-reliance as learners; and their general cognitive skills (i.e., the ability to classify, deduce, compare, and analyze).

The study addresses the following research questions:

- Do low-literacy, limited-English proficient adolescents make greater gains in English literacy after 1 year of reading and writing instruction in Spanish and English, or after 1 year of English only instruction?
- Do any of the gains ascribed to either instructional approach persist beyond the year of instruction?
- Are students more self-reliant in learning English when taught bilingually or monolingually?
- After a year of instruction, are there differences between the two groups in their cognitive skills?

Educational Significance of the Study: The diversity of the students who attend our nation's schools is increasing rapidly. Soon the majority of students in elementary and secondary schools will come from racial and/or ethnic minority groups. Of these groups, the fastest growing within our schools are students from Spanish-speaking backgrounds. Many of these youngsters will be adolescents with limited-English proficiency and deficiencies in reading and writing both in English and in Spanish. Because of their age and high levels of academic failure, these youngsters drop out of school at an alarming rate—the highest of any school-aged group. Clearly, the instructional *status quo* in our schools is not working for these students. Something must be done, if we are to meet the growing need to educate these youngsters.

Many have advocated bilingual instruction as a way to meet the need; others are adamant that an English only approach is the way to go. Despite years of debate, however, there is little research-based evidence that one method is superior to the other. This study will add to the research base by directly comparing the effects of the two methods on comparable groups of students in controlled settings. It is hoped that, through such studies, instructional programs may be designed, and that policies are developed based on empirical findings.

Status of Study and Products: The investigators will produce: an adapted standardized test of reading and writing skills in Spanish and in English; measures of cognitive skills; a bilingual interview for measuring student self-reliance; a structured teacher interview guide; a bilingual interview questionnaire to assess student perceptions of instructional effectiveness; and a set of criteria for evaluating/scoring writing samples. The final report is due at the end of the project period.

OERI Contact: Jerome E. Lord, 202–219–2242

Title of Study: The Out-of-School Transition Among Urban Youth

Principal Investigator(s): Karl Alexander, Johns Hopkins University, Baltimore, MD

Program: Field-Initiated Studies (FIS)

Funding Level: $552,517. Year 1 $156,702; Year 2 $261,115; Year 3 $134,700

Project Period: 12/1/97–11/30/00

Project Design: The study will identify early environments that prepare diverse populations of African-American and white students to participate fully in American life. The study will add critical information to an on-going study of urban youth—the Beginning School Study (BSS). The project supports a comprehensive survey of the life experiences and psychological well being of 23–24 year olds. Researchers will analyze schooling, labor market and family experiences as the youth moves away from high school.

For 16 years the BSS has tracked 790 Baltimore school children, gathering data about personal, social, and academic development from parents, teachers, and schools. Now, data will be gathered on high school graduates 5 years after leaving high school through an indepth survey. The survey will illustrate how adolescents in the study make the transition out of school and into the adult world. Focusing on both the extremes of favorable and unfavorable outcomes the data will illustrate conditions and resources that can move many at-risk youth toward positive outcomes. An important outcome of the study will be data that distinguish at-risk youth that "make it" from those that do not. These data will provide insights into which factors—school, home, personal resources—contribute to breaking out of a life without advantage.

The first 2 years will be devoted to intensive fieldwork on more than 600 members of the BSS, preparing and conducting a survey, and refining new data. The final year will be devoted to analysis.

Educational Significance of the Study: Very little is known about those who manage to avoid the cycle of disadvantage. This study will illuminate how urban youth that experience different levels of success in school and different family circumstances manage the transition out of school. These data may be used to develop policies and practice to increase the number of at-risk kids who succeed in school and in life.

Status of Study and Products: The study began December 1, 1997. In the coming year, an annual performance report will provide information on the progress of the project. A final report is due at the end of the grant period.

OERI Contact: Nevzer G. Stacey, 202–219–1324

Title of Study: The Impacts of Alternative School Restructuring Designs of At-Risk Learners: A Longitudinal Study

Principal Investigator(s): Steven M. Ross, The University of Memphis, Memphis, TN

Program: Field-Initiated Studies (FIS)

Funding Level: $711,757. 17 months $385,951; 16 months $325,806

Project Period: 10/1/97–6/30/00

Project Design: The number of students at risk of educational failure represents an unacceptably large proportion of the school-aged population and continues to rise. Reducing the number of at-risk students will require a comprehensive approach that impacts the school curriculum, the school organization, teacher training, and the school-home connection. In 1994, the reauthorization of the Elementary and Secondary Education Act (ESEA) created new opportunities for many of the nation's schools to provide improved services for at-risk children. This study will address the following research question:

- What are the key outcomes of comprehensive approaches to school reform that improve the achievement of at-risk students?

Classroom, school, and district level data will be gathered on conditions and actions needed for the successful implementation and maintenance of comprehensive reform in a large inner-city district (Memphis City Schools in Tennessee) with high numbers of at-risk students. The study will compare several schools that have implemented a number of comprehensive school reform approaches—20 Title I elementary schools using 8 different externally-developed school-wide programs and 10 comparable schools using locally-developed programs. Classrooms will be observed, teachers and administrators interviewed, and student achievement data collected using researcher-developed performance based tests. In addition, state-mandated, standardized achievement test scores also will be analyzed.

Educational Significance of the Study: The results of this study will provide greater understanding of the conditions and actions necessary to achieve successful restructuring in schools that serve large numbers of academically at-risk students. Specifically, this study will identify school reform models, their components, and implementation strategies for Title I and other school-wide projects to raise student achievement.

Status of Study and Products: The grantee has completed a detailed research plan, development of survey instruments, interview protocols, performance assessment packages. The 30 schools and the research plan has been approved by the District. Reports of research findings will be provided at the completion of the study.

OERI Contact: Ok-choon Park, 202–208–3951

Title of Study: The Effects of School Calendar Variations on Students, Families, and Communities

Principal Investigator(s): Harris Cooper, University of Missouri, MO

Program: Field-Initiated Studies (FIS)

Funding Level: $168,905. Year 1 $63,748; Year 2 $65,718; Year 3 $39,439

Project Period: 1/1/97 to 6/30/99

Project Design: Issues related to the length and schedule of the school year are becoming increasingly important to local districts. This study will conduct three literature reviews concerning the effects of: summer school, alternative school calendars, and extended school years on student achievement and the general well-being of children, their families, and communities. These reviews not only seek to determine overall effectiveness regarding achievement and well-being, but also ask whether the effects of calendar variations differ for different types of communities, students, subject areas, and instructional settings. Specifically, the reviews will provide the following:

- Definitions of the key issues in the calendar debate;
- Descriptions of existing and proposed calendar variations;
- A history of alternative school calendars in the United States;
- A catalog of arguments for and against alternative calendars;
- A model of factors that might influence whether a particular calendar variation will succeed or fail;
- A synthesis of quantitative research examining the effects of summer school and alternative calendars, included but not restricted to measures of achievement, attitudes, delinquency, truancy, and costs of program implementation;
- A similar integration of qualitative research outcomes;
- An analysis of policy guidelines;
- A summary of major conclusions; and
- Guidelines for assessing whether alternative calendars are likely to be successful under varying community conditions, and for implementation of calendar change.

The preliminary search of the literature indicates that there are numerous experimental studies on the effects of school calendar variations, especially studies concerning summer school. This study uses statistical procedures to synthesize this database. There is also much qualitative research literature on the three calendar-related topics. A systematic review of these materials will be conducted because they will address different issues and will provide context for the experimental results. By doing this, the review will benefit not only from the formal research but also from the experiences of school districts and professional educators.

The research design being used views the literature review as scientific research and applies rigorous procedures to it similar to those applied to new data collections. Whether or not the literature being examined is based on quantitative or qualitative research, a credible literature review involves: a careful formulation of the problem, a thorough search of the literature, an evaluation of the quality of the documents obtained and the arguments contained in them, an integration of the obtained information, and an accurate, clear, and concise presentation of results. In addition, the synthesis of traditional research requires careful attention to the application of statistical procedures for combining the results of studies.

Educational Significance of the Study: The long summer vacation that characterizes the typical school year has been implicated as a major source of the gap in learning between students from different economic backgrounds, due to students' differential access to learning opportunities in summer. Also, based primarily on the assumed existence of learning decay over summer, court decisions have required school districts to provide summer educational opportunities for students with learning disabilities. Finally, local school districts often consider alternative school calendars as a means for responding to enrollment growth, to inadequate capital improvement resources, and to lifestyle changes of American families.

There is concern about the possible negative impact of summer vacations on learning. The assumption is that children learn best when instruction is continuous. The long vacation breaks the rhythm of instruction, leads to forgetting, and requires that significant time be spent on review of material when students return to school in the fall. In addition, the long summer break can have a greater negative effect on the learning of children with special educational needs. For example, children who speak a language at home other than English may have their acquisition of English language skills set back by an extended period without its usage. Many states mandate extended-year programs for students with physical or learning disabilities because they recognize these children's need for continuous instruction. Finally, there is growing concern that whatever negative impact summer vacations have on learning might be uneven across children from different economic groups. Reviews of research on these issues will examine the actual effects of school calendar variations and provide a comprehensive guide for decisions regarding school calendars.

Status of Study and Products: The major products the literature review will produce are a summary of conclusions, guidelines for assessing whether summer schools and alternative calendars are likely to be successful under varying student, family, school, and community conditions, and suggestions for how to implement calendar changes. Different products will be developed for use by researchers, school administrators, and school boards. The first annual performance report indicated significant progress being made toward these goals.

OERI Contact: Oliver Moles, 202–219–2211

Title of Study: Study of Alaska Rural Reform

Principal Investigator(s): Robert E. Blum, Northwest Regional Educational Laboratory, OR

Program: Field-Initiated Studies (FIS)

Funding Level: $899,829. Year 1 $299,943; Year 2 $299,943; Year 3 $299,943

Project Period: 9/1/96–8/31/99

Project Design: Rural Alaska Native students perform significantly lower in achievement tests than Native Americans who reside in urban areas. Poverty, cultural isolation, drug, alcohol abuse, and family violence all contribute to academic failure. For rural Alaska Native students, these problems are magnified through their geographic isolation and subsistence-based existence. In response to these problems, a consortium of partners—the Northwest Regional Educational Laboratory, the Alaska Staff Development Network, and the University of Alaska Southeast—have developed the *Alaska Onward to Excellence* (AOTE) model. The AOTE is based on the premise that all students can learn, and that learning goals must be developed with input from parents, village elders, students, and school staff. Commitment by all stakeholders—parents, schools, communities, and the district is an important goal. In AOTE, school districts work closely with village schools and communities to establish valued student outcomes. The educational partnership—where school staff and community member share responsibility for student success—is the cornerstone for lasting change in rural Alaska villages. Preliminary studies indicate that the AOTE model is a viable approach for the improvement of achievement among rural Alaska Native students.

This research will extend data collected on the AOTE and address its applicability in settings outside of Alaska. The researchers will address the following questions:

- Does the AOTE stimulate change that improves performance and retention among Alaska Native students?
- How does the school/community partnership affect teaching and learning?
- What are the key lessons about the model's application and impact that can be applied to rural isolated communities outside of Alaska?

The research will be a collaborative effort between members of the project team and members of the districts and school communities under study. The study will be conducted in 5 rural school districts comprising 28 communities. These districts serve remote subsistence-based villages in which hunting, fishing, and survival skills are part of the indigenous culture. Most villages can only be reached by airplane. Case studies will be conducted in seven villages in various stages of adopting the AOTE.

Educational Significance of the Study: Native American students are among this country's lowest achieving groups. Rural Native Americans, achieve at yet a lower level. This research will provide a deeper understanding of what it takes to bring about positive change in achievement for rural

Native students through work conducted among Alaska Natives. By increasing the number of sites where the AOTE model is applied successfully, data will be gathered on the viability of applying the model outside of Alaska. Lessons will be learned and guidance provided on how to integrate the learning, cultural, and linguistic needs of Native American students who must function in two cultures—their own and mainstream America's.

Status of Study and Products: An annual performance report indicates that substantial progress has been made. A final report will be will be issued at the end of the study in Winter 1999.

OERI Contact: Beth Fine, 202–219–1323

Title of Study: Who's Teaching At-Risk Students?

Principal Investigator(s): Mark Berends, The Rand Corporation, CA

Program: Field-Initiated Studies (FIS)

Funding Level: $299,986. Year 1 $119,612; Year 2 $95,264; Year 3 $85,110

Project Period: 9/1/96–8/31/99

Project Design: This study analyzes existing data on school and school district characteristics. It compares schools and districts with large proportions of at-risk students to schools and districts with fewer at-risk students. The comparisons will focus on teacher minority status (race/ethnicity), teacher quality, rates of teacher attrition, teacher mobility, and the shortfall (if any) between teacher supply and demand. The specific research questions are:

- Are there differences in quality (training and experience), attrition, and mobility between teachers of students at risk of educational failure and teachers of nonat-risk students? Are these differences more apparent between minority teachers and nonminority teachers?
- If such differences exist, why do they occur and what are their implications?
- Given these data, what will be the probable changes in such characteristics among minority teachers over the next 10 years as the teaching force and student population change?
- What public policies can be put in place that efficiently recruit minority teachers?

The study will use data from two sources: the Schools and Staffing Survey (SASS)—a national survey of schools and teachers; and the Texas State Department of Education's records on teacher and
characteristics. This kind of intense scrutiny of schools and teachers of at-risk students within the SASS database has never been conducted before and the addition of the Texas data will provide additional data on schools with large proportions of at-risk students.

Educational Significance of the Study: In the coming years, there will be a substantial change in the racial and ethnic composition of school-aged children in this country. The proportion of minority students in our public schools will increase significantly and, as a result, it is predicted that the size of the at-risk student population will grow substantially since students from minority backgrounds are more likely to live in low-income households, be limited in their English proficiency, and have parents with low educational attainment. All these factors are associated with educational failure.

Since teacher/student interactions are at the core of the educational process, it is crucial to fully describe the teacher resources that at-risk students will have available to them. This is particularly important because research suggests that low achieving students, who are most in need of educational resources and support, are more likely to have less able, less interested, less engaging, and less qualified teachers.

The increasing diversity among our student population also makes the supply, demand, and quality of minority teachers a critical issue. Teachers who understand the culture of their students are able to better communicate with them and provide instruction that is at once more salient and understandable. However, there are indications that the proportion of individuals entering teaching from minority backgrounds is in decline. There is great concern, therefore, that as the population of black and Hispanic students is expanding, the number of minority teachers may be shrinking.

By examining the quality of the teachers that educate at-risk students and examining the future demand and supply of minority teachers, this study will provide critical information for shaping public policy concerning teachers of at-risk students and the recruitment of minority teachers.

Status of Study and Products: In September of 1998, Dr. Berends will submit a profile of minority teachers detailing their sociodemographic characteristics, quality, attrition rate, teaching assignments, and the characteristics of their school districts. At the completion of the project, an analysis of the future demand and supply of minority teachers will be submitted that includes an examination of policy options to improve future teacher recruitment and retention.

OERI Contact: Holly Martinez, 202–219–2024

Title of Study: Cultural Interchange in Four Urban Schools: An Ethnography of At-Risk Students, Their Families and Teachers

Principal Investigator(s): Kathe Jervis, Teachers College, Columbia University, NY

Program: Field-Initiated Studies (FIS)

Funding Level: $490,861. Year 1 $203,254; Year 2 $213,450; Year 3 $74,157

Project Period: 9/1/96–8/31/99

Project Design: Urban at-risk students face a number of cultural barriers, which may include poverty, peer pressures, family instability, and drug and alcohol abuses. The National Center for Restructuring Education, Schools, and Teaching (NCREST) will analyze how these barriers can be eradicated and learning outcomes improved. The following research questions will be addressed:

- How and under what conditions does cultural interchange take place in schools where a high proportion of students are at risk?

- In the context of school life, how do students, parents, teachers, and schools express the values and experiences of their culture?

- How do they respond as individuals to differences in the cultural values and experiences expressed by others in classrooms and schools?

- How do schools support or hinder cultural interchange in classrooms?

Four urban schools are being studied: two elementary schools, a middle school, and a high school. The dynamics of the four classrooms draw on students' backgrounds from divergent cultures. NCREST has collected data on student behaviors and attitudes in each of the four sites. Relationships were developed with teachers, students, parents, staff and administrators in each of the four schools. Investigators will use four case studies and cross-case analyses to define environmental influences, institutional variables and descriptions of student/family behaviors.

Researchers will videotape "culturally responsive" teachers of at-risk children to show what they know about culture as it relates to their teaching. In addition, the study will describe how students and families learn from each other.

Educational Significance of the Study: When at-risk students leave their homes for school they confront cultural barriers to communication and learning. This study uses the premise that classroom environments can foster relationships across racial and ethnic lines so that students will work harmoniously together inside and outside school. By describing how schools and teachers are building on the cultural strengths of families below the poverty line, researchers will contribute to the growing literature on parent/school alliances.

Status of Study and Products: NCREST has completed most of the data collection. The team is now engaged in doing a literature search, coding field notes, analyzing cross-site data in audio taped team meetings, and assembling videotapes from each classroom in preparation for producing a video. First drafts of cases studied will be completed by late spring and they will begin the write-up on cross-site cases at that time.

OERI Contact: Sandra Steed, 202–219–2197

Title of Study: Field-Initiated Study of Vocabulary Knowledge and Reading Comprehension in English Language Learners

Principal Investigator(s): Barry McLaughlin, University of California, Santa Cruz, CA;
Diane August, National Academy of Sciences, Washington, DC; and
Catherine Snow, Harvard University, Cambridge, MA

Program: Field-Initiated Studies (FIS)

Funding Level: $899,901. Year 1 $299,967; Year 2 $299,967; Year 3 $299,967

Project Period: 9/1/96–8/31/99

Project Design: The ability to read at age- and grade-appropriate levels is critical to school success. Yet despite excellent programs and effective teachers, many students for whom English is a second language (i.e., English language learners [ELLs], fail to gain the tools fundamental to success in American schools). This project intends to address the need for valid and reliable predictors of reading comprehension-vocabulary knowledge as it relates to learning to read and the acquisition of literacy skills.

The project involves the collaboration of researchers with 24 teachers in 3 schools involving 600 students in California, Virginia, and Massachusetts. Cross-sectional and longitudinal data is being collected on various aspects of vocabulary knowledge, inferencing, and reading comprehension of fourth- and fifth-graders who are ELLs. Further, the project includes three significant features. The first feature is a systematic investigation of the vocabulary knowledge that ELLs need as the foundation for learning to read. The second feature is a comparison of the skills and strategies ELLs and native English speakers use to learn to read. The third feature is the development and evaluation of a number of intervention strategies for the teachers of the ELLs in the study aimed at fostering vocabulary knowledge and reading comprehension for all students.

Project researchers are pursuing the answers to numerous basic questions regarding vocabulary development in ELLs. Among them, the researchers are investigating how many words ELLs know and how the breadth of their knowledge compare to their English proficient peers; the effects of first or native language vocabulary knowledge have on second or English language vocabulary development; whether ELLs use the same strategies to infer reading comprehension as their native English speaking peers; and whether effective intervention strategies be devised and implemented to improve the vocabulary knowledge and reading comprehension of the ELLs in the study. The ultimate goal of the study is to assert that there are effective strategies that enable ELLs to acquire the age- and grade-appropriate knowledge.

The researchers are using a series of diagnostic and assessment instruments to collect the data needed to answer the above questions. Included are instruments that are useful for determining the inference strategies used by the students in reading and related literacy learning in situations. The project also includes an intensive development phase to prepare the teachers in the sample to implement innovative instructional strategies that help students acquire the skills being addressed by the researchers.

During year 1 of the project, the researchers convened the teachers to develop and outline the intervention strategies to be used in years 2 and 3. Special training sessions on family literacy practices for children from culturally and linguistically diverse backgrounds have already been conducted and will be continued in year 2 of the project.

In year 1, tests of vocabulary knowledge and comprehension were administered to the fourth- and fifth-grade ELLs and native English speaking students who are participating in the project. In years 2 and 3, similar tests will be administered to the students, but only half of the sample of students will participate in the special interventions described above. Further case studies of the 24 ELLs in the study will be conducted on a monthly basis throughout years 2 and 3. In short, over years 2 and 3, the researchers will test the breadth and depth of children's vocabulary knowledge and their strategies for inferring meaning from text and conversation.

Educational Significance of the Study: The premise of the project is that many English language learners do poorly in school because they are not reading at the age and grade levels necessary for school success. The researchers assert that, contrary to conventional wisdom, learning a second language and learning how to use acquired language skills to ensure success in core academic subjects, including language arts is not easy and automatic for children, especially for those who are at risk of educational failure. This study addresses the key features of second language acquisition, especially the process of acquiring vocabulary skills and learning how to use the skills to acquire other knowledge.

Without a comprehensive understanding of what ELL students know and what they need to learn in order to achieve in mainstream classrooms conducted in English, schools are in a poor position to design effective school programs for these students. Teachers are also at a disadvantage as they try to ensure that their students understand subject matter and use reading and literacy skills to improve their chances of school success. This project expects to provide teachers with new insights on what effective reading instruction looks like and how they too can become effective teachers for ELL students, especially in the upper elementary school grades.

Status of Study and Products: Annual performance reports indicate excellent progress in the implementation of the study design. A definitive report will be issued at the end of the study.

OERI Contact: Gilbert N. Garcia, 202–219–2144

Title of Study: Project A.C.T. Early: Advancing Competency of Teachers for Early Behavioral Intervention for Children At Risk

Principal Investigator(s): Arthur Horne, University of Georgia, Athens, GA

Program: Field-Initiated Studies (FIS)

Funding Level: $728,299. Year 1 $252,936; Year 2 $231,989; Year 3 $243,374

Project Period: 9/1/96–8/31/99

Project Design: There is a need to change the ways teachers assess and interact with students in order to increase the classroom success of both students and teachers. Educators need to develop an understanding of the full range of behavior problems and it is important to recognize behavior problems by severity so that educators may react to students in an appropriate way, because misbehavior negatively affects academic performance. Although behavior problems affect the majority of students, at-risk children are more likely to have significant problems existing and poorly adaptive behavior skills.

This study evaluates the implementation of three interventions, or methods, designed to give teachers ways to improve student behavior, stop misbehavior, and thereby improve chances for student achievement. The first method is an assessment and classification process, developed by the researchers, that provides teachers with a new way of defining child misbehavior. The second method is school-based collaboration. The researchers work with school staff to create "action teams" and then introduce the teams to effective techniques for problem solving—working collaboratively to identify solutions and develop action steps. The researchers also work with the action teams to improve their use of community resources to assist students with behavioral problems. The third intervention being tested is a computer assisted decisionmaking system that facilitates rapid and efficient problem solving and program development by the action teams.

The investigation is being conducted in four elementary schools with similar student populations. Fifty-six teachers and approximately 1,000 students in grades K–3 are participating in the study. Action teams are formed and trained by the researchers in all four schools, but only two of the schools are using the computer assisted approach to facilitate their collaborative problem solving. Two of the four schools—one using the computer system and one not using the computer system—are also using the new assessment and classification system. The researchers will use data collected from questionnaires, teacher logs and rating scales, and classroom observations to measure changes in student behavior, school climate, teacher attitudes and skills, and the successful implementation of solutions.

Educational Significance of the Study: Improving the teacher's ability to identify and assist children that demonstrate behavioral problems at an early age will result in improvement in the teacher's ability to teach and in students' capacity to learn. Providing consultation services on site will encourage teachers to have better understanding of the use of related service personnel and increase the teacher's use of community resources. Results include improved school climate, a sense of shared decisionmaking, and improved morale of teachers.

Status of Study and Products: An annual performance report indicates that good progress is being made in the study. A definitive report and a manual will be issued at the end of the study.

OERI Contact: Beth Fine, 202–219–1323

Title of Study: Effects of Worksite Closure on Children's Academic and Psychological Adjustment

Principal Investigator(s): Barbara Debaryshe, University of Hawaii at Manoa, HI

Program: Field-Initiated Studies (FIS)

Funding Level: $146,707 for 18 months

Project Period: 9/1/96–2/28/98

Project Design: More than 3 million American workers per year are left unemployed by worksite closures or corporate downsizing—the effects of this unemployment on children's academic achievement and behavior must be understood. This study examines children's academic and psychological adjustment in rural communities where mass layoffs have just occurred. It will address the questions:

- What are the effects of community unemployment on changes in student performance, behavior, health, and school priorities?
- How do the plantation closings affect the children's future plans for education and employment?
- To what extent do parental well-being, parenting practices, child social support and child coping strategies serve as risk or protective factors for student adjustment in the face of parental job loss?
- What are the views of children, parents, and teachers on how worksite closings affect children's academic and vocational plans? What support services do they believe would be most beneficial to the students experiencing family and community economic change?

Only families where at least one parent is a current or former employee of the sugar plant are included in the study. The test group is drawn from 11 public schools located in 4 east Hawaii school districts and extensive interviews are being conducted with 58 families and their children (age 10–18). School level data will be compared from communities on the island of Maui, with a similar population and stable rural agricultural economy—two viable sugar plantations. Variables for data analysis will include grade point averages, SAT scores, failures of state tests, data on attendance, suspensions, health room visits, teen pregnancy rates, child abuse or neglect reports, free/reduced lunch, and special education services. Statewide school records and teacher surveys will supply current and prior academic achievement data, and behavioral adjustment measures.

The study will also analyze the stress and resiliency factors affecting youth academic and emotional adjustment to family occupational loss. Children and one parent will be interviewed separately for factors dealing with economic strain, parenting practices, and child social supports.

Educational Significance of the Study: Learning how families, schools, and school districts react to economic downturns in their respective areas could provide blueprints for positive action to other communities that are facing similar circumstances around the country. Understanding the positive and negative changes that occur, could forewarn other families and school administrators to have appropriate resources in place to minimize the negative affects on student behavior, academic achievement, and community and school resources.

Status of Study and Products: Indepth interviews are completed. Analysis of statewide school data has been accomplished. Focus groups were conducted with teachers, and a report has been written. Transcription of the interviews with family and youth is in process of completion. A final performance report will be issued at the end of the study.

OERI Contact: Beth Fine, 202–219–1323

Title of Study: Athletic Investment, Academic Promise: How Participation in School Sports May Foster Academic Resilience and Investment Among At-Risk Students

Principal Investigator(s): Jomills Henry Braddock II, University of Miami, FL

Program: Field-Initiated Studies (FIS)

Funding Level: $385,646. Year 1 $124,641; Year 2 $128,509; Year 3 $132,496

Project Period: 10/1/97–9/30/00

Project Design: Academic underachievement, absenteeism, and other forms of student disengagement pose significant barriers to the educational success of at-risk students. Schools and communities need to develop strategies aimed at developing at-risk students' academic and social resiliency—the capacity for active, responsible, and persistent behavior, even in the face of hardship. Athletic participation is a unique aspect of the school experience that already claims a significant amount of student energy and thus, athletics holds untapped potential for improving at-risk students' academic and social resiliency.

The researcher will examine different types and intensities of athletic participation among 8th-, 10th-, and 12th-grade students; patterns of participation across gender and ethnic groups; and whether positive associations between participation and academic and personal development persist over time. This study will analyze data from the original National Education Longitudinal Study (NELS: 88) and follow-up NELS studies conducted in 1990 and 1992.

The analysis consists of two components:

- The descriptive component will provide information regarding opportunities for athletic participation in middle and high schools and the types and intensity levels of sports participation for different ethnic/gender/grade level subgroups; and

- The comparative component will take into account student and school background characteristics and will use statistical techniques to estimate the effects of different types and levels of athletic participation on academic and social outcomes such as academic grades, discipline referrals, educational aspirations, and attendance.

Educational Significance of the Study: Although athletics represents a large investment of energy in virtually all American secondary schools, research on issues relating to the academic and social development of at-risk youth to athletics is woefully lacking. This study will provide much needed evidence of the potential of athletics for at risk, ethnically diverse male and female students. The study will also provide practical suggestions for improving school and community-based educational programs that can be used by practitioners and policymakers.

Status of Study and Products: The project has begun to gather and analyze student and school-based information as planned. Good progress is being made, and a definitive report will be issued at the end of the project period.

OERI Contact: Beverly E. Coleman, 202–219–2280

Title of Study: Social-Capital and Its Effects on the Academic Development of Adolescents At-Risk of Educational Failure

Principal Investigator(s): Valerie E. Lee, University of Michigan, MI; and Robert G. Croninger, University of Maryland, College Park, MD

Program: Field-Initiated Studies (FIS)

Funding Level: $298,179. Year 1 $154,983; Year 2 $77,038; Year 3 $66,158

Project Period: 9/1/96–8/31/99

Project Design: For adolescents to be successful in school, they need the active involvement of parents, other adults, and civic organizations as agents for transmitting norms, values, and knowledge. The capacity for positive life outcomes inherent in these personal relationships is referred to as "social capital. " School-based social capital produced, for example, by parent associations, extracurricular programs, and teacher-student relationships, is a critical source of academic support for students. For students at risk of educational failure, school-based social-capital is critical because of a possible lack of social-capital found in their homes and communities.

Little is known, however, about the primary questions to be addressed in this study:

- How is social capital practiced in the schools?
- How do schools organize to foster and maintain social capital?
- How does social capital affect the academic success of at-risk adolescents?

The researchers hypothesize that school-based forms of social-capital can significantly reduce the gap in academic success between at-risk students and those who are not. The study has two phases, each with its own database and set of questions. In Phase I, an analysis of the National Educational Longitudinal Study (NELS: 88) data will lead to clearer delineations of: types of academic and social "at riskness"; the relationship between access to social-capital and social and academic success; and how the different expressions of social-capital—for example, teacher expressions of caring—are related to at-risk students' academic achievement or aspirations.

In Phase II, the researchers will conduct case studies in seven high schools which have been identified as exemplary school-based social-capital sites. Through detailed interviews of principals, parents, teachers, social workers, and students, the researchers will describe how schools develop and sustain social-capital; the different ways and degrees to which social-capital is transferred to at-risk students and their families; and the organizational/policy barriers that impede the development of social-capital in schools.

Educational Significance of the Study: At-risk students often have less social-capital in their homes and communities than more affluent students. Determining how schools can provide access to social-capital, therefore, is a issue that holds tremendous promise for improving the educational success of at-risk adolescents. This study describes personal and organizational forms of school-based social-capital, documents its benefit for at-risk students, and provides an understanding of how it can be developed successfully in schools with the goal of closing the achievement gap.

Status of Study and Products: The annual performance report for year 1 indicates that the work is proceeding on schedule. In years 2 and 3, the researchers will produce journal articles for each of the two phases, a synthesis of results from both phases, and a discussion of implications for policy and practice.

OERI Contact: Karen Suagee, 202–219–2244

Title of Study: Timing of the Influences of Cumulative Poverty on Children's Cognitive Ability and Achievement

Principal Investigator(s): Guang Guo, the University of North Carolina, Chapel Hill, NC

Program: Field-Initiated Studies (FIS)

Funding Level: $135,432. Year 1 $66,419; Year 2 $69,013

Project Period: 9/1/96–8/31/98

Project Design: . Children born into poverty often have difficulty transitioning from the home to school and their progress through the grades is marked by cumulative failure and low academic attainment. Although these consequences of long-term poverty are well documented, the differential effects on children's cognitive development over time are little understood. This study analyzes national longitudinal data on at-risk children's thinking and communication skills at 2 points—at ages 6 and 13—in an attempt to better explain the effect that long-term poverty has on cognitive development. The major question to be addressed is:

- Does long-term poverty exert a greater negative effect on ability and achievement earlier or later in a child's life?

To the researcher, cognitive development is defined by both ability (a trait determined by both environmental and genetic factors early in life) and achievement (a combination of ability, motivation, and opportunities). In determining when and in what ways long-term poverty has its greatest influence, 2 "critical periods" of children's' cognitive development have been chosen for study: age 6, the typical age of entry to elementary school, and age 13, adolescence. By looking at the results of both ability (IQ) and achievement testing for the same children at the two critical periods, it is possible to determine what the differential effects of long-term poverty are and when they occur. For example:

- If long-term poverty has a greater effect on ability at an early age, then differences between poor 6-year-olds and their more affluent age-mates on ability tests should be greater than differences found on achievement tests;
- If long-term poverty has a greater effect on ability at a later age, then differences between poor 13 year-olds and their more affluent age-mates on ability should be greater than differences found on achievement tests;
- If long-term poverty has a greater effect on achievement at an early age, then differences between poor 6-year-olds and their more affluent age-mates on achievement tests should be greater than differences found on ability tests; and
- If long-term poverty has a greater effect on achievement at a later age, then differences between poor 13-year-olds and their more affluent age-mates on achievement tests should be greater than differences found on ability tests.

In carrying out the study, the researcher will analyze data from two sources: the National Longitudinal Survey of Youth (NLSY) and the Children of the NLSY (NLSY-C). The NLSY survey has been conducted since 1979 while the NLSY-C has been conducted since 1992; both surveys include economically disadvantaged African-American, Hispanic, and white children.

Educational Significance of the Study: Greater understanding of the relationship between poverty and children's cognitive growth has important policy implications. It is critical that policymakers have solid evidence on which to base educational initiatives to ameliorate the effects of long-term poverty. If it can be established that ability is negatively affected by poverty in the earliest years, then it is readily apparent that intervention must begin early and that such intervention will have a salutary effect on later achievement.

Status of Study and Products: The first year's annual report indicates good progress. A definitive report will be issued at the end of the study.

OERI Contact: Karen Suagee, 202–219–2244

Title of Study: Mastery Behaviors and Scholastic Competence of At-Risk Children Transitioning Into School and the Shared Perceptions of Their Parents and Teachers

Principal Investigator(s): Garrett Lange, the University of North Carolina, Greensboro, NC

Program: Field-Initiated Studies (FIS)

Funding Level: $808,660. Year 1 $252,991; Year 2 $271,942; Year 3 $283,727

Project Period: 9/1/96–8/31/99

Project Design: For typical children, social skills and the ability to master tasks during the early years are important predictors of later school adjustment. This study focuses on learning-mastery behaviors (i.e., independent and persistent attempts to master tasks and activities, often through the use of purposeful, deliberate and strategic actions). Research indicates that, overall, children who exhibit these behaviors are more likely to succeed in school than are children with less active approaches to learning. These kinds of behaviors are learned and exhibited very early in a student's academic career.

The researchers hypothesize that low-income children in Title I preschool and kindergarten programs may be socialized by teachers toward obedience and less active approaches to learning. This set of behaviors may not provide the needed foundation to develop skills at higher grade levels where the academic demands are more complex and more independent learning is required. The researchers further hypothesizes that teachers' and parents' judgements of children's behavior disproportionately affect at-risk students. For example, some learning-mastery behaviors may be discouraged by teachers and parents because they are negatively viewed as aggression rather than positively viewed as assertiveness. These kinds of assertive behaviors may be more prevalent in children who enter Title I preschool and kindergarten programs.

The learning-mastery behaviors and scholastic competence of a sample of 224 at-risk students will be studied as the students progress through preschool, kindergarten, and first grade in 11 elementary schools in Guilford County, North Carolina. The study will include and compare students who attended Title I preschool programs with students who did not. Investigators will observe student classroom behaviors and assess their competence in mathematics and reading. The findings will tell us about the contribution of early learning-mastery behavior to early and later scholastic competence.

In addition, videotapes of the children at work will be made. Based on these tapes, teachers and parents will be asked to judge the children's competence and give their reasons for the judgements. The teacher and parent judgments will be compared to the children's use of mastery behaviors and their scholastic competence. These findings will tell us a lot about adult perceptions of students' behaviors, their influence on those behaviors, and the link between student behaviors and academic performance.

Educational Significance of the Study: This study will identify essential learning-mastery behaviors for later school success and explore parent and teacher perceptions of such behaviors. It will help children who often fail in school by providing a research basis for improved guidance and training for teachers and parents of at-risk students.

With the increased emphasis on early childhood education for at-risk children, there is a danger that such interventions may inadvertently focus on compliant behavior and concrete learning rather than learning-mastery skills. This focus may enable students to be successful in the early years of school but may fail to be useful, or even be harmful, in the later school years.

Status of Study and Products: Annual performance reports indicate that good progress is being made in the study. A definitive report will be issued at the end of the study.

OERI Contact: Holly Martinez, 202–219–2024

Title of Study: Resiliency-Enhancement: Programmatic Support for Ethnically Diverse Urban Youth

Principal Investigator(s): Margaret Beale Spencer, University of Pennsylvania, PA

Program: Field-Initiated Studies (FIS)

Funding Level: $674,997. Year 1 $108,266; Year 2 $273,682; Year 3 $293,049

Project Period: 9/1/97–8/31/00

Project Design: The transition from adolescence to young adulthood is a difficult one. A compelling desire for acceptance, extreme self-consciousness, greater analytical abilities, and a desire to train for adult roles are hallmarks of this transition. Adolescents in urban areas are particularly vulnerable during this transition because negative stereotypes, limited academic and social supports, and a growing awareness of limited opportunities in the community suppress the development of resiliency—the capacity for active, responsible, and persistent behavior, even in the face of hardship. The results of this study will provide greater understanding of the nature of supports necessary to build adolescent resiliency.

Research tells us that key elements for building adolescent resiliency are the perception of greater opportunity, cultural/ethnic sensitivity, and most importantly, development of a positive social identity along with incentives that reinforce that identity. The researcher hypothesizes that a community-based program which provides these support elements for at-risk adolescent students will result in students using improved stress management methods. The resultant improvement should lead to students' learning more productive behaviors over time; for example, developing good study habits to succeed in courses or developing better work habits.

The study implements a support program with these features and compares the academic progress of a selected groups of at-risk students (marginal students that meet federal guidelines for free-lunch) in grades 9–12 to comparable students within the Philadelphia public schools. The study focuses on how creating a new social identity for these students and providing positive reinforcement effects academic performance and the rate of school completion. The youths' new social identity will be that of "community health information provider" and the positive reinforcement for their work will be a modest stipend.

Major activities include: design of the curriculum in conjunction with medical students, neighborhood health facilities and family centers; developing agreements with all high schools for information and recruitment of students; selection and orientation of students; and program implementation and ongoing monitoring of students' community service and academic progress and high school completion. Students will be permitted to continue in the program based on satisfactory academic progress. Each of 2 years the program will select additional groups of students by grade and all students (including those who become ineligible for participation) will be followed as they transition into college or the world of work.

Educational Significance of the Study: Over the past 25 years, there has been a growing body of educational research on at-risk minority adolescents. However, too frequently this research has been "problem focused. " This study, however, builds on the strengths of these youth by providing them with the opportunity to take on a productive social role. The findings will identify essential elements of a program to support the development of resiliency and to prepare at-risk youth for the transition to college or work.

Status of Study and Products: Good progress is being made on identifying and recruiting students for the program as well as students for the comparison group. Moreover, work continues on the development of the program curriculum. A final study report will be issued in August 2000.

OERI Contact: Karen R. Suagee, 202–219–2244

Title of Study: Families and Schools Together: An Experimental Analysis of a Parent-Mediated Intervention Program for At-Risk American Indian Children

Principal Investigator(s): Thomas Kratochwill and Joel R. Levin, the University of Wisconsin, Madison, WI

Program: Field-Initiated Studies (FIS)

Funding Level: $902,718. Year 1 $278,922; Year 2 $324,278; Year 3 $301,529

Project Period: 10/1/96–9/30/99

Project Design: The academic progress of American Indian students is on par with the national average through grade three. At that time academic difficulties escalate dramatically. These early academic difficulties are magnified through attendant family stress factors (e.g., poverty and high family substance abuse) that lead to a dropout rate of over 50 percent among American Indian students. If one can lessen or eliminate these stresses, it is possible that the predicted academic drop by these children may be mitigated? This study will address the question:

- Can multiple family stressors (such as poverty and the increasing social isolation of American Indian families) be significantly countered by building and maintaining stable and supportive multifamily relationships?

Stable and supportive multifamily relationships are those that improve bonding between: the child and parent; all family members; parents and self-help groups; and parents and school and community agencies.

This research applies principles of family mental health approaches to the development of an early elementary grade program (grades K–3) to enhance American Indian family well-being. The study builds on the Families and Schools (FAST) program, a national school-based parenting/family support model that brings groups of families together in a sequential and well structured series of activities. The model will be adapted to meet the tribal preferences and family needs in three tribal communities. Effectiveness of the model will be evaluated in terms of improved parent functioning (e.g., positive expectations, home structure that supports learning, emotional nurturance, effective discipline, and parent-school involvement) and educational outcomes (e.g., increased learning time and academic achievement).

The study design calls for three separate program cycles, one for each tribal community. Each cycle consists of an 8 week set of activities involving multiple family groups. A variety of observations and surveys are used to assess each family's progress. Every participating FAST student will be monitored for improvements in attention, motivation, attendance, and other areas related to academic progress. The design also calls for identifying nonparticipating students in the same grades as a comparison for assessing FAST student outcomes.

Educational Significance of the Study: Although there have been efforts to increase the academic performance of American Indian students, they have had limited success because they fail to consider family stresses that contribute to academic failure. Moreover, currently developed family interventions do not address the unique needs and culture of American Indian families. The study adapts a widely used program (FAST) and incorporates culturally compatible parent and family support practices to enhance the academic success of young children.

Status of Study and Products: The annual performance report indicate good progress. A definitive report that describes the salient and effective components of the FAST model will be issued at the end of the study.

OERI Contact: Karen Suagee, 202–219–2244

Title of Study: Long-Term Effects of the Chicago Child-Parent Centers

Principal Investigator(s): Arthur J. Reynolds, University of Wisconsin, WI

Program: Field-Initiated Studies (FIS)

Funding Level: $526,503. Year 1 $196,715; Year 2 $162,598; Year 3 $167,190

Project Period: 9/1/96–8/31/99

Project Design: The Chicago Child-Parent Center and Expansion Program (CPC) is helping preschoolers living in poverty start school ready to learn. It's also helping program participants perform better academically once they are in school. Each year since 1967, Chicago's 24 CPCs have provided comprehensive educational and family support services for approximately 5,000 3–9-year-olds who are most at risk of academic underachievement and school failure.

The study investigates the impact of this early childhood program 7 to 10 years after the end of program participation. Three major questions include:

- Is participation in early childhood intervention from preschool to grade 3 associated with school achievement and attendance, grade retention and special education placement, high school completion, and juvenile delinquency?
- In estimating program effects, are the effects of program participation consistent for different methods of analyzing the data?
- Which individual, family, and school-related factors account for the effects of participation in early childhood intervention on social competencies in high school?

The study includes 1,150 minority children (ages 3–8) from high poverty neighborhoods who participated for up to 6 years in the Chicago Child-Parent Center and Expansion Program. Also included is a matched comparison group of 389 children who participated in an alternative early childhood program in the years around 1985. The project is expected: to increase knowledge concerning the optimal duration and timing of early childhood intervention programs; to identify the elements of intervention that account for high school success; and to enhance understanding of the role of intervention programs in promoting social competence.

Research methods include collection of data through surveys and interviews with children, and telephone interviews with parents. School records from grades 10 through 12 will also be obtained for information on standardized test scores, school status (grade, school attended, dropout status), delinquency infractions, and days absent. Existing data on issues such as the effects of family participation and perceptions of educational experiences by grade 10 students will also be analyzed.

Educational Significance of the Study: Studies of model and large-scale programs over the past 2 decades show that quality early childhood interventions for children in poverty improve their readiness for school and promote longer-term school success. This includes greater school achievement and a reduction in grade retention and special education placement.

The amount and quality of existing evidence concerning the long-term effects of large-scale government-funded programs is inadequate to inform public policy. Most of the evidence on long-term effects into high school comes from small-scale model programs that differ in significant ways from large-scale established programs like Head Start. Although studies of model programs indicate how effective early interventions *can be*, policymakers and the public are most interested in knowing how effective current large-scale programs *are*. In a time of intensive fiscal accountability at all levels of government, research on the effects of large-scale programs is needed more than ever.

Research has not yet determined the optimal timing and duration of interventions. Although it is increasingly believed that a 1- or 2-year preschool program cannot immunize children from school failure, the ideal length of intervention is not clear. Do 2 or 3 years of intervention beginning at age 3 yield the same effect as 2 or 3 years beginning at age 5? Do programs that extend into the primary grades yield more long-lasting effects than programs that stop in kindergarten? This study will provide important evidence for or against a policy of allocating additional resources to extend the duration of intervention for children in poverty.

A final question that has not been addressed adequately by previous research regards the factors and processes that account for long-term effects of early childhood intervention. Once a direct relationship is established between program participation and long-term outcome, the precise mechanisms or pathways that produce this main effect must be identified. Research on the pathways of early childhood intervention effectiveness has significant implications for research and practice. It adds to basic knowledge of how early interventions exert their effects over time in conjunction with other influences. Also, the pathways that are identified can be used to help design and modify intervention programs for children and families.

Status of Study and Products: Significant progress has been made according to annual performance reports. A paper on the effects of the Child Parent Centers was presented at the annual meeting of the American Educational Research Association in March 1997. A summary report of research findings will be provided at the completion of the study.

OERI Contact: Oliver Moles, 202–219–2211

Small Business Innovation Research (SBIR)

Title of Study: Job Success—A School-to-Work Transition Initiative

Principal Investigator(s): Bruce B. Brown, Educational Patterns, Inc., Baltimore, MD

Program: Small Business Innovation Research (SBIR)

Funding Level: $39,990 for 6 months

Project Period: 10/1/97–3/31/98

Project Design: Students at risk of educational failure may lack the kinds of attitudes and emotional control needed to get and hold a job. Many come from families and communities that fail to provide the experiences that have helped other students acquire needed social skills in their early years. Still others are recent immigrants to the United States and must learn a new culture and appropriate social skills as well as English. As a result, by the time at-risk students reach high school, they are not only in danger of academic failure but unemployment after they leave school because they have not acquired the kinds of interpersonal and social skills needed for job success.

This project will design and develop a computer-based program to teach job-related social skills to at-risk students in high school. Once learned, these skills will give students the social ability to successfully transfer from classroom to the job and be competitive in the world of work.

Through computer-based role-playing, the developed program will provide students with realistic scenarios and methods for:

- carrying on successful interpersonal relationships, both on and off the job;
- meeting the societal expectations of the young adult worker;
- evaluating and changing or improving one's life-style; and
- making academic study relevant to the world of work.

This program will help students acquire social skills important in a wide variety of job-related situations.

Educational Significance of the Study: The United States has one of the poorest school-to-work transition programs in the world (Educational Testing Services Policy Information Center, 1990), especially for students whose circumstances do not provide them with needed attitudes, work habits, and social skills for job success. This project will help provide those skills, habits and attitudes.

Status of Study and Products: The contractor has defined the format and the content of a prototype computer-based role-playing program. The actual prototype will be delivered at the end of the contract period.

OERI Contact: Ok-choon Park, 202–208–3951

Title of Study: Automated Teaching Aid for At-Risk Readers

Principal Investigator(s): James E. Atkinson, Orion Enterprises, Inc., Fredericksburg, VA

Program: Small Business Innovation Research (SBIR)

Funding Level: $50,000 for 6 months

Project Period: 10/1/97–3/31/98

Project Design: Reading is the foundation of all academic learning, and children with reading problems are at risk of educational failure. As many as 30 percent of all students in America cannot read English by the end of first grade. The percentage is much higher for the growing number of students whose native languages are not English. Although most of these students can become competent readers with intense remedial instruction, already overburdened teachers often find it impossible to provide the level of attention and instruction that the students need.

The goal of this project is to develop a computer-based teaching aid to diagnose student reading problems and provide appropriate remedial instruction for at-risk students in preschool or early grades of elementary school. The program will:

- free the teacher from tedious and repetitive instruction;
- allow the student to proceed at his or her own pace;
- assess the student's progress as many as necessary;
- select and present appropriate instructional materials;
- keep track and record each student's progress;
- provide immediate feedback to the student; and
- accommodate English, Spanish, or other languages as the student needs.

Multimedia capability of computer, including sounds, pictures, and video, will be used to make the learning program more interesting.

Educational Significance of the Study: This project will demonstrate that technology can help the teacher identify reading problems and provide remedial instruction tailored to the specific needs of each student. Furthermore, it will show that technology is inherently better suited than a human teacher for certain aspects of reading instruction.

Status of Study and Products: The contractor developed paper-based scripts for the development of a computer-based assessment tool and samples of remedial instructional materials. The final report of the project with the prototype software will be delivered at the end of the contract.

OERI Contact: Ok-choon Park, 202–208–3951

Title of Study: Web Places: Project-Based Activities for At-Risk Youth

Principal Investigator(s): Henry M. Halff, Mei Technology Corporation, San Antonio, TX

Program: Small Business Innovation Research (SBIR)

Funding Level: $49,998 for 6 months

Project Period: 10/1/97–3/31/98

Project Design: Often, when at-risk students are lacking in basic skills, it is simply not enough to focus on those skills. Recent research findings suggest that basic skills should be taught in more interesting realistic contexts. Students need more:

- opportunities to explore domains of interest;
- interactive and attractive instruction;
- project-oriented authentic work;
- collaboration with peers;
- opportunities to generate products; and
- chances to develop advanced skills.

This project will provide an Internet-based environment for at-risk students in high school to improve their education through project-based activities, including publication of their work in the World Wide Web. The proposed Internet-based environment, *Web Places*, will consist of various types of templates for students' learning activities, including developing, organizing, and publishing their work in the Web.

The student activities will include journalism on community issues, natural science projects, or digital art galleries. Activities such as these are particularly appropriate for at-risk students because they: provide opportunities for the students to integrate their school, home and street lives for a project; give the students focused and meaningful work; connect the students with communities outside of their own; and enhance their identity in productive ways.

Educational Significance of the Study: Most researchers and educators now agree that more advanced competencies, such as comprehension, reasoning, composition, and experimentation, are not best acquired by direct instruction or the simple transmission of information, but rather when a learner actively interacts with the instructional content. *Web Places*, the system to be developed in this project, will provide a rich environment for students to develop more advanced competencies and abilities than simple knowledge and skills that are frequently emphasized in classroom instruction.

Status of Study and Products: The contractor has completed the conceptual design of the system. At the completion of the project, the prototype Web sites will be available on the Internet and the project report will be delivered.

OERI Contact: Ok-choon Park, 202–208–3951

Title of Study: VR Quest for Knowledge: A Virtual Realty Learner-Centered Instructional Tool for At-Risk Students

Principal Investigator(s): George B. Chapman, Mission Research Corporation, Santa Barbara, CA

Program: Small Business Innovation Research (SBIR)

Funding Level: $49,976 for 6 months

Project Period: 10/1/97–3/31/98

Project Design: As technological advancements move along at high rates of speed, students who are at-risk due to geographical location and/or economic disadvantage are falling further behind students who do not face similar barriers. While these students should be benefiting from the tremendous technological advancements in information exchange and multimedia learning environments, they are actually handicapped even more than before and face greater risk of low educational achievement and/or reduced academic expectations.

The goal of this project is to provide schools with an Internet-accessible learning community that allows at-risk students and educators to learn academic content while enjoying themselves. Students would explore their virtual surroundings developed with high-end 3-dimensional graphics and animation.

This system will consist of educational programs integrated subject contents in a multimedia environment. In this system, parents and teachers will be able to customize student learning activities using a user-friendly graphic user interface. Using the Internet and local area networks, students in different classes, or at different schools, will be able to simultaneously use the same educational programs, allowing them to communicate and collaborate toward achieving common goals.

Educational Significance of the Study: This system will promote interactions between teachers and students in a virtual reality environment, involving students working individually and collaboratively in small or large groups. It will help students, particularly at-risk students, think and reason, communicate and share ideas, and understand the world in which they live.

Status of Study and Products: The contractor identified multimedia tools and computer interface architecture for the development, and developed five virtual reality simulations and five virtual reality scenes of real-world environments using 3-dimensional modeling software. At the end of the project, the contractor will deliver a final report and an advanced prototype system.

OERI Contact: Ok-choon Park, 202–208–3951

Title of Study: A Hybrid, CD-ROM/Web Based, Multimedia, Life Skills Curriculum

Principal Investigator(s): Alice Ray, Ripple Effects, Inc., San Francisco, CA

Program: Small Business Innovation Research (SBIR)

Funding Level: $50,000 for 6 months

Project Period: 10/1/97–3/31/98

Project Design: Both school failure and failure in other areas of life, to a large extent, are caused by emotional and behavioral problems. For this reason, "at-risk" students are not only those who face barriers related to race, income level, family structure and/or language ability, but also as students with certain behavioral patterns. These may include:

- aggressive and annoying behaviors;
- a tendency to rush into things;
- negative and defiant behavior;
- high levels of attention seeking behavior;
- low levels of guilt feelings; and
- self-centered verbal responsiveness, exemplified by interrupting others, blurting out thoughts and talk which is irrelevant to ongoing conversation.

These behaviors negatively impact not only on academic success, but also on relationships with teachers and peers.

Recent advances in technology allow a new approach for teaching emotional and social skills important in dealing with behavioral problems. Multimedia learning materials can be developed to appeal to various aspects of student intelligence and personality in the learning process. Hyperlink structure in a computer-based learning environment allows each user to pursue the logic dictated by her or his own learning style and interest, while accessing a variety of skill building activities. The Internet allows students to participate in structured discussion about selected topics with other youth from around the world.

This project will develop the conceptual design of a multimedia-based life skills curriculum. The program will stress decisionmaking skills, self-control strategies, and self-esteem skills that are believed to be important in dealing with emotional problems and have a significant impact on academic learning and social success.

Educational Significance of the Study: This program will be a valuable resource for teaching emotional and social skills to at-risk students. Having considered the importance of emotional and social skills in business and other social life, this program can be adapted for use in industry, including mental health care institutes.

Status of Study and Products: The contractor developed a prototype program and tested it with a representative group of at-risk students. At the end of the project, the prototype software and a final report will be delivered.

OERI Contact: Ok-choon Park, 202- 208-3951

Title of Study: Locating and Using Community Resources for At-Risk Kids

Principal Investigator(s): Donnar Lloyd-Kolkin, Health & Education Communication Consultants, New Hope, PA

Program: Small Business Innovation Research (SBIR)

Funding Level: $50,000 for 6 months

Project Period: 10/1/97–3/31/98

Project Design: National school reform needs close partnerships among families, communities and schools. Several initiatives have demonstrated that such partnerships help utilize community resources to support the educational achievement of at-risk students. However, many parents and teachers cannot understand the importance of the partnership and do not know how to work collaboratively.

This project will develop a multimedia program to promote collaborative partnerships among teachers and parents by teaching them collaborative skills. The program will permit users to test their skills in simulations of actual situations and to view the same situation from the perspective of another person. Through these activities, important collaborative skills such as communication, negotiation and conflict resolution will be developed.

To develop the multimedia program, literature related to collaborative partnerships will be reviewed and interviews will be conducted with parents, teachers, and community leaders who have participated in collaborative efforts. An expert advisory panel will make recommendations about the contents and organization of the program.

Educational Significance of the Study: Collaborative partnerships among families, communities and schools are critical for the success of school reform efforts for at-risk students. This program will provide not only systematic procedures for guiding the collaborative efforts, but also facilitate school reform efforts.

Status of Study and Products: The contractor completed a literature review, developed interview protocols, and began interviews with parents, school and community agency personnel. A final report and the prototype program consisting of story boards and script will be delivered at the end of the project.

OERI Contact: Ok-choon Park, 202–208–3951

Title of Study: Culture and Life Across Student Populations (CLASP): Multimedia Approaches to Student Diversity

Principal Investigator(s): Katherine G. Hayes, Juarez & Associates, Inc., Los Angeles, CA

Program: Small Business Innovation Research (SBIR)

Funding Level: $49,621 for 6 months

Project Period: 10/1/97–3/31/98

Project Design: It is estimated that, by the turn of the century, up to 40 percent of the children in the nation's classrooms will be nonwhite. These demographic changes require reexamining the ways in which positive interactions can take place between people of diverse cultures and languages. New knowledge and methods for the positive interactions should be developed and integrated into bilingual and multicultural educational programs and services.

The purpose of this project is to provide teachers from preschool through elementary school with multimedia materials regarding 25 cultural groups most likely to be found in American classrooms today. The program will consist of videos, printed materials, and CD-ROM disks that contain information pertaining to each cultural group's language, literature, national heroes, parenting and health practices, cultural values, and biographical/community resources as well as learning activities designed to further teacher and students' knowledge and understanding of specific cultural groups. The program will be developed through the following procedure:

- identify the content;
- develop the resource kit and curriculum;
- insure the involvement and collaboration of community representatives, parents, teachers and administrators in the development;
- determine the most appropriate delivery system of the program; and
- develop a prototype program.

Educational Significance of the Study: This program will help school teachers realize their role in the cultural make-up of their classrooms. Once they realize their roles, they will be able to find ways to recognize the culture of their students, acknowledge and integrate it in their teaching, and promote positive interactions among students of diverse cultures and languages.

Status of Study and Products: The contractor identified the cultural groups and different aspects of each group that should be included in the program. At the end of the project, the prototype multicultural program and a final report will be delivered.

OERI Contact: Ok-choon Park, 202–208–3951

Directed Research

Title of Study: Consortium of High Performance Learning Communities

Principal Investigator(s): Paul Berman, RPP International. Subcontractors on the study are: the University of California, Berkeley, CA, Graduate School of Education; and the Oregon State Department of Education, OR

Program: Directed Research

Funding Level: $5,945,279. Year 1 $1,697,588; Year 2 $1,178,648; Year 3 $1,248,769; Year 4 $1,242,026; Year 5 $578,248

Project Period: 0/1/96–9/30/01

Project Design: A number of studies have explored the characteristics and design elements of schools that support high levels of achievement by all students. These kinds of schools have been labeled "high performance learning communities" (HPLCs) because they involve all the school personnel and the surrounding community in the education of every child in the school. What is lacking, however, is information on how these findings can be applied to other schools. In short, we know what a "high performance learning community" looks like but very little about how to create one.

This 5 year research study focuses on the development and implementation of specific strategies and procedures necessary to support and sustain high achievement for all students, especially students in high poverty school communities. The key research questions are:

- What are core characteristics of HPLCs?
- What developmental paths (prototypical strategies and structural changes) can schools, particularly those in high poverty areas, take to become HPLC?
- How should resources and support be provided to schools and communities to assist them to initiate, support and maintain HPLC?
- How should successes in implementing HPLC at individual schools be replicated and scaled up?

The project's approach to developing HPLCs is based upon five assumptions: (1) no single model of school change works in all places; (2) practitioners provide the best source of strategies and assistance for other practitioners; (3) assistance should build school's capacity to manage and provide quality instruction; (4) effective schools use and adapt different strategies to fit their unique circumstances; and (5) state policies affect the prospects for developing and maintaining positive school change (i.e., school reform).

Based upon research literature, the project is developing a set of HPLC principles and self-assessment instruments for use by schools. Schools selected to pilot the principles and instrument will work in partnership with the research team to revise the initial list and formulate core characteristics that are comparable across HPLCs.

In order to study the developmental paths that schools take to become HPLCs, 13 pilot sites in high poverty areas that are at different stages of development, demographic and economic conditions, and locations have been selected to test prototypical strategies. The results will indicate what works under what conditions.

Capacity-building assistance will be provided using a practitioner-directed HPLC consortium and electronic network. Teacher and community leaders from existing HPLCs will assist leaders at pilot schools who will guide their school and community. Ongoing training of these leaders takes place during two project leader meetings and a Summer Institute each year. The project also provides a support team to work with the schools. Each school has the option of selecting a team member to work as "HPLC Project Liaison" or "HPLC Project Whole School Coach" with the school.

The study will focus replication efforts on schools in districts or regions of pilot feeder clusters. The goal is to grow a critical mass of HPLC schools and use their example and leadership to leverage change throughout their larger communities. Participating schools are being selected from California and Oregon because these states follow different public policies to promote education reform.

Educational Significance of the Study: There is currently a great deal of discussion about the poor quality of our schools and unsatisfactory achievement levels of our students. As communities search for solutions, they often try to apply a "one size fits all" approach to educational reform efforts. They try to identify one model, apply it to all situations and look for immediate results, but without success.

This study will provide interested communities, especially in high poverty areas, with information about how to choose a learning vision for their school, customize and implement strategies appropriate to the school and communities's reality, and develop methods for cultivating the talent within the community to support a high performance learning community. The study will include the research basis for the strategies and procedural guidance for carrying them out. The outcome will be learning environments that offers all students opportunities to achieve at high levels.

Status of Study and Products: The project will produce a publishable product that is of value to educational communities at the end of each funding cycle. The first product is due in April, 1998. At the end of the project RPP, Inc. will deliver a final report that describes study accomplishments and lessons learned—both practical supporting activities and research findings.

OERI Contact: Kathy FitzGerald, 202–219–1468

Title of Study: National Partnership for Excellence and Accountability in Teaching (NPEAT)

Principal Investigator(s): Willis D. Hawley, University of Maryland, MD; Subcontractors: Teachers College, Columbia University, NY; Michigan State University, MI; Holmes Partnership, University of Delaware, DE; and Peabody College, Vanderbilt University, TN

Program: Directed Research

Funding Level: $23,000,000. Year 1 $4,000,000; Year 2 $4,500,000; Year 3 $4,500,000; Year 4 $5,000,000; Year 5 $5,000,000

Project Period: Not to exceed 60 months, from the contract start date of September 30, 1997

Project Design: The National Partnership's mission is to improve the quality of teachers and teaching in America's classrooms. The Partnership brings together elementary, secondary, and postsecondary institutions, state and local education agencies, national professional associations, and others critical to the recruitment, preparation, and career development of teachers in this country. Members of the Partnership include:

- American Association of Colleges for Teacher Education (AACTE)
- American Association of School Administrators (AASA)
- American Federation of Teachers (AFT)
- Common Destiny Alliance (CODA)
- Council for Basic Education (CBE)
- Council of Chief State School Officers (CCSSO)
- Council of the Great City Schools
- Education Week
- The Holmes Partnership
- International Reading Association (IRA)
- Michigan State University
- Middle Grade School State Policy Initiative (Carnegie Corporation)
- National Alliance of Business
- National Association of Elementary School Principals (NAESP)
- National Association of Secondary School Principals (NASSP)
- National Board for Professional Teaching Standards (NBPTS)
- National Commission on Teaching & America's Future (NCTAF)
- National Council for the Accreditation of Teacher Education (NCATE)
- National Council for Teachers of Mathematics (NCTM)
- National Education Association (NEA)
- National Staff Development Council
- New American Schools
- Peabody College, Vanderbilt University
- Recruiting New Teachers, Inc (RNT)
- Teachers College, Columbia University
- University of Maryland

Through a program of research, technical assistance and dissemination, NPEAT will expand the knowledge base on how to recruit, develop, and retain quality teachers for the nation's classrooms. Through its partners, NPEAT will also work toward a consensus on needed teacher education and professional development reform to increase teachers' capabilities, motivation and opportunities for promoting student achievement.

The Partnership's program is organized into six programs:

1. The Role of Standards and Assessments in the Improvement of Teaching;
2. Teacher Education and Professional Development;
3. Teacher Recruitment and Retention;
4. Restructuring Schools as Learning Organizations;
5. The Characteristics and Consequences of Effective Partnerships, and
6. Dissemination.

Educational Significance of the Study: Research tells us that the quality of instruction is instrumental to student achievement and that nothing makes a greater difference in the quality of instruction than the quality of the teacher. Research also tells us that nearly a third of those that enter teaching leave the profession within the first 3 years. Moreover, we know that on average, children in the most need of quality instruction, those at risk of educational failure, are the most likely to receive the most ill-trained and the most junior of teachers.

These are well known facts, yet efforts to bring positive change to teacher preparation and performance have been hindered by a lack of consensus and coordinated effort among those critical to the development of teachers for this nation's classrooms. If every child in this country is to be taught by a caring, talented, high quality teacher, then how teachers are recruited into the profession, prepared for the classroom, and sustained over their career must be reformed. And, this effort must be joined by all those who influence teaching.

The NPEAT agenda works toward the improvement and maintenance of high quality teaching in every school, especially in schools serving students placed at risk through the reform of the entire continuum of teacher experience—from student recruitment for teacher preparation programs through career-long professional development. Through NPEAT research, technical assistance and dissemination, consensus will be built among NPEAT's partners about what comprises and supports high quality teaching and how to go about making it a reality in every classroom.

Status of Study and Products: This contract is in its early stages and many aspects are still under development and negotiation with OERI, particularly the research designs and methodologies of the 33 research projects. For that reason, the information presented for each specific project does not contain the detail provided for projects elsewhere in the compendium. The information will be updated as it becomes available.

OERI Contact: Harold Himmelfarb, 202-219-2031

Title of Study: Standards and Assessments (NPEAT Program 1)

Principal Investigator(s): Linda Darling-Hammond, Teachers College; and Marilyn Rauth, National Commission on Teaching & America's Future, NY

Program: Directed Research

Funding Level: $5,686,565. Year 1 $984,580; Year 2 $1,383,585; Year 3 $1,213,294; Year 4 $1,162,218; Year 5 $942,888

Project Period: 9/30/97–9/29/03

Project Design: New teaching standards and assessments have been developed by national professional associations for teacher education, licensing, and advanced certification. The standards are designed to reflect current knowledge about quality teaching in this era of more challenging academic standards for all students. This research program will look at the effects of these standards and how they are manifested in actual classroom instruction. An important focus of this research program will be the relative efficacy of these standards under disparate classroom conditions and with diverse groups of students.

Researchers will examine how Board certified teachers differ in their practice and classroom effectiveness from those not certified, and will study the type of preservice education, professional development supports, and school contexts that are associated with success in meeting teaching standards. Phil Kearney and Ann Harman from National Board for Professional Teaching Standards (NBPTS) are conducting studies of the type of professional development activities and school environments that help teachers meet NBPTS standards, and how NBPTS certified teachers differ in their practice and effectiveness from similar teachers who are not Board certified. Ray Pecheone from the Connecticut Department of Education and Glorie Ladson-Billings and Linda Darling Hammond Teachers College are conducting similar studies that focus on the Interstate Teacher Assessment and Support Consortium (INTASC) standards and assessments rather than the NBPT standards. Suzanne Wilson from Michigan State University is examining how teachers learn and change their practice when engaged in NBPTS or INTASC portfolios and performance assessments, and Gloria Ladson-Billings and Mary Gomez at the University of Wisconsin are examining the practice of highly effective teachers in urban schools and teachers of color to discern the extent to which key features of this practice are represented in NBPTS and INTASC assessments.

This program of research also includes studies of the relationship between NCATE and INTASC standards and teacher preservice education. Emerson Elliott from the National Council for the Accreditation of Teacher Education (NCATE) is developing content-oriented standards for teachers' subject matter knowledge that can be applied in accreditation reviews and decisions in teacher education programs. Richard Wisniewski from the University of Tennessee is using NCATE's database to study how colleges of education are incorporating teaching standards in performance-driven curricula. Carol Smith from the American Association of Colleges of Teacher Education is using INTASC and NCATE standards to improve teacher education programs and prepare colleges for accreditation review by NCATE. Two additional studies focus on the development of masters programs around NBPTS standards: Mary Futrell from George Washington University is designing, testing, and disseminating new masters degree programs and an evaluation research design to test impact on teacher learning and student success; and Boyce Williams from NCATE is assisting colleges and universities in modifying Masters degree programs so they are built upon NBPTS standards.

Judy Shulman from West Ed is developing and disseminating case methods associated with teaching standards, including new cases tied to INTASC standards and seminars on case teaching and case writing. Finally, Beverly Falk at Teachers College is studying student standards and teaching practice by examining how teachers learn and change their practice when engaged in development, analysis, and scoring of student standards and assessments.

West Ed is developing and disseminating case methods associated with teaching standards, including new cases tied to INTASC standards and seminars on case teaching and case writing. A researcher at Teachers College is studying student standards and teaching practice by examining how teachers learn and change their practice when engaged in development, analysis, and scoring of student standards and assessments.

Educational Significance of the Study: Teaching standards and assessments have been embraced by numerous local and state agencies and schools of education. While these standards are based on what is currently known about sound teaching practice, the assumption is that if teachers meet these certification requirements and standards of assessment, then they are, by definition, good teachers. Unfortunately, we do not fully understand the effects of these standards on teaching nor do we know the school and classroom conditions that best allow teachers to apply what they've learned. By knowing what aspects of these standards lead to better teaching, how the standards are manifested in teacher behaviors, and under what conditions these behaviors are most likely to appear, those responsible for teacher development will be better able to reform teacher education and professional development to include the knowledge and skills that will lead to quality teaching.

OERI Contact: Stephanie Dalton, 202–208–2497

Title of Study: Construct and Consequential Validity Study of the Standards of the National Board for Professional Teaching Standards (NBPTS)
Principal Investigator(s): Ann Harman, National Board for Professional Teaching Standards
Project Period: Years 1–3
Research Questions: This study examines how teachers who succeed at meeting National Board standards differ in their practice and their effectiveness from those who do not.

Title of Study: Construct and Consequential Validity Study of Interstate Teacher Assessment and Support Consortium (INTASC) Standards
Principal Investigator(s): Ray Pecheone, Connecticut Department of Education
Project Period: Years 1–2
Research Questions: This study examines whether and how teachers who succeed at meeting INTASC standards differ in their practice and classroom effectiveness from those who have not met these standards.

Title of Study: Validity of National Board for Professional Teaching Standards and Interstate Teacher Assessment and Support Consortium (NBPTS/INTASC) Assessments for Effective Urban Teachers
Principal Investigator(s): Gloria Ladson-Billings and Mary Gomez, University of Wisconsin
Project Period: Years 1–2
Research Questions: The study examines the practice of highly effective teachers in urban schools and teachers of color to discern the extent to which key features of this practice are represented in INTASC and NBPTS assessments.

Title of Study: Correlates of Success for National Board for Professional Teaching Standards (NBPTS) Certification
Principal Investigator(s): C. Philip Kearney, National Board for Professional Teaching Standards Certification
Project Period: Years 3–5
Research Questions: This study examines the kinds of preservice teacher education, induction, mentoring or other professional development supports; as well as school context conditions (team teaching, embedded learning opportunities, compatible curriculum policies within districts and schools), associated with success in meeting NBPTS standards.

Title of Study: Correlates of Success for Interstate Teacher Assessment and Support Consortium (INTASC) Assessments
Principal Investigator(s): Ray Pecheone, Connecticut Department of Education; and Linda Darling-Hammond, Teachers College
Project Period: Years 3–5
Research Questions: This study is analogous to the NBPTS study described heretofore. It examines learning opportunities and teaching contexts associated with success on INTASC assessments.

Title of Study: Teacher Standards, Learning and Practice
Principal Investigator(s): Suzanne Wilson, Michigan State University
Project Period: Years 2–5
Research Questions: This study examines how teachers learn and change their practice when engaged in NBPTS or INTASC portfolios and performance assessments.

Title of Study: Student Standards and Teaching Practice
Principal Investigator(s): Beverly Falk, Teachers College
Project Period: Year 3
Research Questions: This study examines how teachers learn and change their practice when engaged in development, analysis, and scoring of student standards and assessments.

Title of Study: Improving Teaching through National Accreditation
Principal Investigator(s): Carol Smith, American Association of Colleges of Teacher Education
Project Period: Years 1–5
Research Questions: This study prepares fifty colleges for accreditation review by National Council for the Accreditation of Teacher Education (NCATE) using the INTASC and NCATE standards to improve the quality of teacher education.

Title of Study: Graduate Programs and National Board for Professional Teaching Standards
Principal Investigator(s): Boyce C. Williams, National Council for the Accreditation of Teacher Education
Project Period: Years 1–4
Research Questions: This study assists colleges and universities in modifying Masters degree programs so that they are built upon NBPTS standards.

Title of Study: Effectiveness of National Board for Professional Teaching Standards Programs
Principal Investigator(s): Mary Futrell, George Washington University
Project Period: Years 2–5
Research Questions: This study designs new masters degree programs around NBPTS standards; tests the programs' effectiveness and usefulness in terms of more effective teacher learning and student success; and disseminates program protocols and a research design to test program impact on teacher and student learning. The project builds on a Holmes Partnership network in the metropolitan Washington, D.C. area.

Title of Study: Subject Matter Knowledge Standards
Principal Investigator(s): Emerson Elliott, National Council for the Accreditation of Teacher Education
Project Period: Years 1–2
Research Questions: This study develops content-oriented standards for examining evidence of teachers' subject matter knowledge that can be applied in accreditation reviews and decisions in teacher education programs

Title of Study: Case Methods and Standards-Based Teaching
Principal Investigator(s): Judy Shulman, West Ed
Project Period: Years 1–5
Research Questions: This study develops and disseminates case methods associated with teaching standards in three related activities: developing new cases tied to INTASC standards, conducting seminars on case teaching and case writing, and creating and managing a website for commentaries and discussion critique related to the cases.

Title of Study: Performance-Based Teacher Education
Principal Investigator(s): Richard Wisniewski, University of Tennessee
Project Period: Years 1–2
Research Questions: This study examines how colleges of education are incorporating teaching standards in performance-driven curricula using NCATE's database from more than 500 institutions.

Title of Study: Teacher Education and Professional Development (NPEAT Program 2)

Principal Investigator(s): Gary Sykes, Michigan State University; Gary Griffin, Teachers College; and David Imig, American Association of Colleges for Teacher Education

Program: Directed Research

Funding Level: $4,752,245. Year 1 $857,034; Year 2 $994,236; Year 3 $963,276; Year 4 $1,077,212; Year 5 $860,487

Project Period: 9/30/97–9/29/03

Project Design: Teachers learn throughout their careers. This program of research will examine how teacher learning occurs under a variety of circumstances and along the continuum of a teaching career, including preservice teacher education, the first teaching assignment, the early years of teaching, and ongoing professional development experiences. This systematic research approach will provide valuable insight into how quality teaching is developed and sustained at different stages of a teacher's career.

At the preservice level, Rick Hovda at Ohio State University and Gary Griffin at Teachers College are investigating specific influences on learning and program viability across well-established Professional Development School sites. Linda Darling-Hammond at Teachers College and Jon Snyder at the National Commission on Teaching and America's Future are exploring whether graduates of seven exemplary teacher education programs are more successful at facilitating student learning than novices with different kinds of preparation. Penelope Earley at the American Association of Colleges for Teacher Education is investigating methods of addressing institutional constraints on the reform of teacher education by using a panel of experts to gather case descriptions of alternative and innovative university policies in support of teacher education reform. Frank Murray from the Holmes Partnership is conducting a study on developing an elementary core subjects major in the areas of mathematics, science, social studies/history, and language arts, while Ted Hasselbring and colleagues at Peabody College are examining the effects of using technology on the development of teacher knowledge and skill at the preservice level.

Sharon Feiman-Nemser and David Pearson at Michigan State University and Gary Griffin and colleagues at Teachers College are examining teacher learning in the early years by developing portraits of exemplary mentors; studies of mentor influences on novice teachers; and exploration of how program and policy features shape the character of mentored learning. Ken Howey at Ohio State University is examining how teachers at various career stages acquire knowledge and skill, related to INTASC and NBPTS standards, deemed useful in urban settings. Ken Zeichner at the University of Wisconsin is studying school-based teacher research as a professional development strategy that builds teacher knowledge about equity in literacy achievement while creating opportunities for sharing that knowledge with other teachers. Ann Lieberman and Celia Oyler at Teachers College are investigating teacher networks as sites for teacher learning through three effective networks and studying their impact on participating teachers' knowledge, skills and dispositions. Finally, Carolyn Evertson and colleagues at Peabody College are exploring teacher communication via technology as well as the requirements, strengths, and limitations of various modes of on-line dialog represented across a continuum of professional activity.

Educational Significance of the Study: Continuous teacher learning is critical to effective teaching, but the developmental process of quality teaching has yet to be thoroughly understood and explicated. This program of research will provide information on what teachers should know and be able to do to be effective in the classroom and how the knowledge acquired and skills developed can best be sustained and upgraded over a career. In a variety of contexts and at various stages in teachers' careers, the studies will examine the critical aspects of teacher learning—those that make positive differences in student achievement.

OERI Contact: Luna Levinson, 202–208–3716

Title of Study: Developing an Elementary Core Subjects Major
Principal Investigator(s): Frank Murray, Holmes Partnership
Project Period: Years 1–5
Research Questions: This study identifies conceptual variations of the elementary education major in a diverse set of institutions, and develops and field tests elementary education curriculum frameworks, syllabi, and related materials in the core subject areas of mathematics, science, social studies/history, and language arts.

Title of Study: Exemplary Teacher Education, Teaching and Learning
Principal Investigator(s): Linda Darling-Hammond, Teachers College; and Jon Snyder, National Commission on Teaching & America's Future
Project Period: Years 1–3
Research Questions: This study explores whether graduates of seven exemplary teacher education programs are more successful at facilitating student learning than novices with different kinds of preparation.

Title of Study: Standards-Based Teacher Preparation for Urban Schools
Principal Investigator(s): Ken Howey, Ohio State University
Project Period: Years 1–5
Research Questions: This study examines how teachers at various career stages acquire knowledge and skill, related to INTASC and NBPTS standards, deemed useful in urban settings.

Title of Study: Uses of Technology in Standards-Based Teacher Education
Principal Investigator(s): Ted Hasselbring, Linda Barron, Angelo Collins, and Vicki Risko, Peabody College of Vanderbilt University
Project Period: Years 1–5
Research Questions: This study investigates the effect of the use of technology on the development of teacher knowledge and skill at the preservice level, tracing influences on subsequent practice.

Title of Study: Addressing Institutional Constraints on the Reform of Teacher Education
Principal Investigator(s): Penelope Earley, American Association of Colleges for Teacher Education
Project Period: Years 1–2
Research Questions: This study uses a panel of experts to gather case descriptions of alternative and innovative university policies in support of teacher education reform.

Title of Study: Mentoring and Teacher Induction as Sites for Teacher Learning
Principal Investigator(s): Sharon Feiman-Nemser and David Pearson, Michigan State University; and Gary Griffin, Lin Goodwin, and Maritza MacDonald, Teachers College
Project Period: Years 1–5
Research Questions: This study examines teacher learning in the early years through descriptive portraits of exemplary mentors; studies of mentor influences on novice teachers; and exploration of how program and policy features shape the character of mentored learning. The production, testing, and use of hypermedia materials that represent exemplary mentor teaching together with effective teaching of diverse learners will also be explored.

Title of Study: Professional Development Schools as Sites for Intern, Teacher and Student Learning
Principal Investigator(s): Rick Hovda, Ohio State University; and Gary Griffin, Teachers College
Project Period: Years 1–5
Research Questions: This study examines specific influences on learning and program viability across well-established Professional Development Schools sites, traces the effects of teacher learning to their influence on students, creates vignettes of successful practice, and organizes dialogue among NPEAT partners about characteristics and correlates of effective practice.

Title of Study: Teacher Research as Source of Teacher Learning
Principal Investigator(s): Ken Zeichner, University of Wisconsin
Project Period: Years 1–4
Research Questions: This study studies school-based teacher research as a professional development strategy that builds teacher knowledge about equity in literacy achievement while creating opportunities for sharing that knowledge with other teachers and develops guidelines and products to assist school districts in developing teacher research networks.that promote equity in literacy learning.

Title of Study: Teacher Networks as Sites for Teacher Learning
Principal Investigator(s): Ann Lieberman and Celia Oyler, Teachers College
Project Period: Years 1–3
Research Questions: This study selects three effective networks—the Bay Area Writing Project, the Southern Maine Partnership, and the New York state network that has coalesced around inclusion of special needs children in regular classrooms—and studies their impact on participating teachers' knowledge, skills and dispositions.

Title of Study: Uses of Technology in Teacher Education and Development

Principal Investigator(s): Carolyn Evertson, Marcy Gabella, and Margaret Smithey, Peabody College

Project Period: Years 1–5

Research Questions: This study explores teacher communication via technology (who participates, what they learn, the content around which communications are organized, and the effects on teaching practice) as well as the requirements, strengths, and limits of various modes of on-line dialog represented across a continuum of professional activity.

Title of Study: Recruitment and Retention (NPEAT Program 3)

Principal Investigator(s): Cynthia Dillard, Ohio State University; and David Haselkorn, Recruiting New Teachers, Inc.

Program: Directed Research

Funding Level: $939,527. Year 1 $114,816; Year 2 $159,290; Year 3 $206,214; Year 4 $229,097; Year 5 $230,110

Project Period: 9/30/97–9/29/03

Project Design: Fewer college students and college graduates, especially minorities, are choosing teaching as a profession. Moreover, too many who do go into teaching, leave the profession within the first years of teaching. This set of studies addresses the issues of how both to increase the number of qualified teacher recruits and the number of quality teachers retained in the profession. These studies will examine national data sets that include information on teacher recruitment sources, mentoring experiences of beginning teachers, and retention patterns in order to identifying best practices in recruitment and retention that support quality teacher development. Innovative entry routes to the profession, and other models of recruitment that could serve as exemplars will also be studied.

Linda Darling-Hammond from Teachers College and Richard Ingersoll from the National Commission on Teaching and America's Future are using national data from surveys of teachers and schools, and the follow up studies of teachers, to examine the recruitment sources, preparation, and mentoring experiences of entering teachers along with retention patterns for novice and experienced teachers. Rodney Reed from Pennsylvania State University and Cynthia Dillard from Ohio State University will draw on the experiences of local partnerships of schools and colleges of education and their elementary and secondary school partners to identify and create models of recruitment and retention. Finally, David Haselkorn from Recruiting New Teachers, Inc. will focus on community college programs that both encourage and enable prospective teachers to complete the baccalaureate degree and link to teacher preparation through a national survey of community colleges and case studies of eight exemplary programs.

Educational Significance of the Study: Not enough qualified people are going into teaching and too many are leaving the profession within the first 3 years. As a result, entry standards are often lowered to meet demand and teachers are given assignments outside their areas of expertise. This is especially true for mathematics and science. Moreover, there is a growing shortage of minority teacher candidates despite the fact that our school population is becoming more diverse and could benefit from the special empathy and understanding that teachers of similar backgrounds could provide. Clearly, better methods must be developed to both recruit and retain qualified individuals in the teaching profession if this nation is to achieve its goal of placing a highly qualified, competent, and caring teacher in every classroom.

OERI Contact: Sharon Bobbit, 202–219–2126

Title of Study: Recruitment and Retention Patterns for High Need Teachers
Principal Investigator(s): Linda Darling-Hammond, Teachers College; and Richard Ingersoll, National Commission on Teaching & America's Future
Project Period: Years 3–5
Research Questions: This study uses national data from surveys of teachers and schools, and the follow up studies of teachers, to examine the recruitment sources, preparation, and mentoring experiences of entering teachers along with retention patterns for novice and experienced teachers. The study will pay particular attention to the issues of recruiting and retaining high need candidates: teachers of color; teachers in shortage fields like mathematics, science, special education and bilingual education; and teachers in high need locations, such as central cities and poor rural areas.

Title of Study: A Pipeline Approach to Teacher Recruitment and Retention
Principal Investigator(s): Rodney Reed, Pennsylvania State University; and Cynthia Dillard, Ohio State University
Project Period: Years 1–3
Research Questions: This study draws on the experiences of local partnerships of schools and colleges of education and their elementary and secondary school partners to identify and create models of recruitment and retention. The study examines their implementation, and policies and practices related to alternative recruitment models.

Title of Study: Community College Career Corridors for Teacher Recruitment
Principal Investigator(s): David Haselkorn, Recruiting New Teachers, Inc.
Project Period: Years 1–5
Research Questions: This study focuses on community college programs that both encourage and enable prospective teachers to complete the baccalaureate degree and link to teacher preparation through a national survey of community colleges and case studies of eight exemplary programs.

Title of Study: Restructuring Schools as Learning Organizations (NPEAT Program 4)

Principal Investigator(s): James Cibulka, University of Maryland, MD; and Lynn Coffin, National Education Association, Washington, DC

Program: Directed Research

Funding Level: $3,520,357. Year 1 $262,713; Year 2 $673,377; Year 3 $717,143; Year 4 $882,808; Year 5 $984,316

Project Period: 9/30/97–9/29/03

Project Design: A school is an organization and like other organizations it must encourage its members to continuously learn if the organization is to improve. It must also allow for the application of new and innovative techniques. In short, like teachers, the school must learn and grow. It must become a learning organization. The studies under the Restructuring Schools as Learning Organizations program will identify and examine the characteristics of effective organizations and ways of restructuring schools to promote continuous teacher learning and positive organizational change. In carrying out the studies, the Partnership will look at how organizations impede or facilitate needed change, can provide opportunities and conditions for teacher learning, how information technology can be used to advantage.

In studying the creation of high-performance schools through organizational and individual learning, James Cibulka at the University of Maryland will utilize four strategies: analysis of national data sets; development of a typology of schools as learning organizations; case studies of how schools serving at-risk populations develop as learning organizations, and the differences for student learning; and exploratory models for evaluating cost-effectiveness of professional development. Kathleen Fulton, also at the University of Maryland, will evaluate the effectiveness of a yearlong training program called the Keys to Effectiveness in Your Schools (KEYS) Institute. KEYS places videos, case studies, and problem solving experiences on the Internet to offer occasions for interaction between university-based experts and the teachers undertaking the training.

Judith Warren Little from the University of California, Berkeley will examine the ways in which teachers' learning in four reform-specific areas is facilitated or impeded by the internal feature of the school workplace and by the nature and extent of teachers' ties to external sources of expertise. John Bransford and colleagues at Peabody College will develop and evaluate a professional development model focused on interactions around student work; expand the model to additional sites; and examine how the teachers and schools, individually and collectively, transform into "learning communities." Finally, Penelope Peterson at Northwestern University and Richard Prawat and colleagues at Michigan State University will examine how complex student learning and/or commitment to ambitious curriculum reform develops by exploring how opportunities to delve deeply into student mathematical thinking and/or mathematical content effects teacher learning.

Educational Significance of the Study: The improvement of teaching, teacher motivation, teacher capability, and working conditions are rarely addressed through coordinated organization restructuring strategies. For example, professional development may improve teacher knowledge and skills, but working conditions must make it possible for teachers to use their newly learned strategies. The current standards-based reform movement may lead to more challenging curricula, but to improve student learning schools must provide for the possible reorganization of the school day, the use of technology, teacher collaboration. Similarly, recruitment strategies that draw new, capable individuals into teaching will not succeed unless schools are restructured to make use of their talents and sustain teachers' commitment to their careers. Unless schools are restructured to become learning organizations, the reform of teacher education will be short-circuited at the school house door.

OERI Contact: Barbara Lieb, 202–219–2191

Title of Study: Creation of High-Performance Schools through Organizational and Individual Learning
Principal Investigator(s): James G. Cibulka, University of Maryland, MD
Project Period: Years 1–5
Research Questions: This study consists of four strategies: analysis of national data sets; development of a typology of schools as learning organizations; case studies of how schools serving at-risk populations develop as learning organizations, and the differences for student learning; and exploratory models for evaluating cost-effectiveness of professional development.

Title of Study: An Internet-Based Program for Teacher Leaders Involved in Restructuring Schools for Teacher and Student Learning
Principal Investigator(s): Kathleen Fulton, University of Maryland, MD
Project Period: Years 1–5
Research Questions: This study evaluates the effectiveness of a year-long training program called the Keys to Effectiveness in Your Schools (KEYS) Institute. KEYS places videos, case studies, and problem solving experiences on the Internet to offer occasions for interaction between university-based experts and the teachers undertaking the training.

Title of Study: Teacher Learning, Professional Community and Accountability in Restructuring High Schools
Principal Investigator(s): Judith Warren Little, University of California, Berkeley, CA
Project Period: Years 1–5
Research Questions: This study examines the ways in which teachers' learning in four reform-specific areas is facilitated or impeded by the internal feature of the school workplace and by the nature and extent of teachers' ties to external sources of expertise.

Title of Study: Student Work as a Vehicle for Enhancement of Teacher Learning
Principal Investigator(s): John Bransford, Susan Goldman, and James Pellegrino, Peabody College, TN
Project Period: Years 1–5
Research Questions: This study develops and evaluates a professional development model focused on interactions around student work; expands the model to additional sites; and examines how the teachers and schools, individually and collectively, transform into "learning communities."

Title of Study: Student Learning and Curriculum Reform in Mathematics as a Foci for Teacher Learning
Principal Investigator(s): Penelope Peterson, Northwestern University; and Richard Prawat, Gary Sykes and Suzanne Wilson, Michigan State University, MI
Project Period: Years 1–5
Research Questions: This study examines how complex student learning and/or commitment to ambitious curriculum reform develops. It explores how opportunities to delve deeply into student mathematical thinking and/or mathematical content effects teacher learning.

Title of Study: Understanding and Facilitating Effective Partnerships (NPEAT Program 5)

Principal Investigator(s): Nancy Zimpher, Ohio State University, OH; and Frank Murray, Holmes Partnership, DE

Program: Directed Research

Funding Level: $2,650,486. Year 1 $452,461; Year 2 $476,651; Year 3 $519,453; Year 4 $529,203; Year 5 $672,718

Project Period: 9/30/97–9/29/03

Project Design: In order to reform teacher education and professional development, viable, effective partnerships must be forged all along the continuum of teacher recruitment through retirement. For example, communities must form partnerships with their schools and teachers, schools must form partnerships with the universities that supply their teachers, and organizations that certify and assess teachers must come together to reach a consensus on what constitutes high quality teaching and teachers. These studies will focus on the how to form viable and sustainable partnerships at both local and national levels. The focus includes the sustainability of NPEAT as an active partnership beyond the term of this contract.

Kenneth Howey at Ohio State University, Michael Fullen from the University of Toronto, Nancy Zimpher from Ohio State University and Frank Murray with the Holmes Partnership will examine the NPEAT partnership itself in the form of a continuous improvement design, targeted at providing both formative and summative data on the progress and impact of this newly formed partnership. Linda Darling-Hammond from Teachers College and Barnett Berry from the National Commission on Teaching and America's Future (NCTAF) will build on the research and policy development of the NCTAF as it is implemented in 12 partner states, and other states that are moving to become affiliates of the Commission by collecting and analyzing data on the incentives and impediments to the recommendations of NCTAF. Finally, Tom Mooney from the Cincinnati Federation of Teachers, Robert Yinger from the University of Cincinnati, John Grossman from the Columbus Education Association, and Nancy Zimpher from Ohio State University will focus on two urban partnerships, in Cincinnati and Columbus, Ohio, which are well known for their efforts to implement improvement-oriented strategies for teaching and learning that cut across the continuum of teacher learning.

Educational Significance of the Study: The nation fails to provide caring, competent, and highly qualified teachers for all students largely because the principal influences on the teaching profession are misaligned—namely, university degree requirements, union contracts, license requirements, certification standards, tenure requirements, public perception of teachers' work, inservice requirements, salary and reward structures, leadership practices, among others. One remedy for persistent misalignment is through creating partnerships among those who have authority and responsibility for teaching. In the partnership model, participants who are principal influences on teaching and teacher development and who seek reform are connected for consensus building and knowledge use. The partners work together to coordinate their influence on teaching for the purpose of realignment and reform. Such an alignment of policies is essential if significant improvements in teaching quality are to occur.

OERI Contact: Barbara Lieb, 202–219–2191

Title of Study: A Continuous Improvement Model for the Implementation and Study of NPEAT Partnership

Principal Investigator(s): Kenneth Howey, Ohio State University; Michael Fullan, University of Toronto; Nancy Zimpher, Ohio State University; and Frank Murray, Holmes Partnership

Project Period: Years 1–5

Research Questions: This study examines the NPEAT partnership itself in the form of a continuous improvement design, targeted at providing both formative and summative data on the progress and impact of this newly formed partnership. Multiple approaches to data collection include forms of participant observations, member reporting through surveys, interviews, logs and journals, focus groups, document review, videotapes of meetings with analysis of the interactions, and external observers, among other measures.

Title of Study: Incentives and Impediments to the Improvement of Teaching

Principal Investigator(s): Linda Darling-Hammond, Teachers College; and Barnett Berry, National Commission on Teaching and America's Future

Project Period: Years 1–5

Research Questions: This study builds on the research and policy development of the National Commission on Teaching and America's Future (NCTAF) as it is implemented in 12 partner states, and other states that are moving to become affiliates of the Commission. The study will collect and analyze data on the incentives and impediments to the recommendations of NCTAF.

Title of Study: Studying Innovative Practices across the Teacher Learning Continuum in Local Urban Partnerships

Principal Investigator(s): Tom Mooney, Cincinnati Federation of Teachers; Robert Yinger, University of Cincinnati, College of Education; John Grossman, Columbus Education Association; and Nancy Zimpher, Ohio State University

Project Period: Years 1–3

Research Questions: This study focuses on two urban partnerships, in Cincinnati and Columbus, Ohio, which are well known for their efforts to implement improvement-oriented strategies for teaching and learning that cut across the continuum of teacher learning. Both partnerships have jointly designed a variety of strategies to recruit a more able and diverse teaching force into their districts.

Title of Study: Dissemination (NPEAT Program 6)

Principal Investigator(s): Willis Hawley and Linda Valli, University of Maryland, College Park, MD

Program: Directed Research

Funding Level: $2,976,690. Year 1 $406,872; Year 2 $491,680; Year 3 $545,989; Year 4 $694,063; Year 5 $838,086

Project Period: 9/30/97–9/29/03

Project Design: In addition to research, NPEAT will engage in several types of activities that encourage and support the implementation of effective policies and practices. The various strategies to foster the use of knowledge to achieve systemic reforms include:

- Collaborative ways of designing and conducting research;
- Publications by NPEAT and its partners;
- Workshops, conferences, and teleconferences;
- Development of models of effective; and
- Technical assistance such as learning materials for use in professional development.

NPEAT will make extensive use of telecommunications such as a Web site to develop a National Dialogue on the Improvement of Teaching. The National Dialogue and information about all of NPEAT's activities and findings from its research will be available on the Internet and accessible through Web sites in every school in the nation.

Educational Significance of the Study: NPEAT's goal is to ensure that America will provide all students, especially students placed at risk, with what should be their educational birthright: access to competent, caring, and qualified teachers through implementation of effective strategies and research on those implementations. As NPEAT supports implementation of strategies to improve teaching, it will also study their impact. Research on these implementations will lead to new knowledge and drive continuous improvement in the work of the Partnership. NPEAT's plan involves an integrated set of processes that promise to promote continuous improvement in the quality of teaching.

OERI Contact: Sharon Bobbit, 202–219–2126

Introduction

The National Institution Educational Governance, Finance, Policymaking, and Management is part of the Office of Educational Research and Improvement (OERI) in the U.S. Department of Education. The Institute was created by the Education Research, Development, Dissemination, and Improvement Act of 1994.

The Institute's Mission is to provide leadership and support for research and development examining the critical governance, finance, policymaking, and management aspects of teaching and learning. The purpose of the work is to unearth findings with long-term consequences for policymakers and educators and to disseminate those findings in the most useful ways to help them design, implement, and sustain effective education reforms.

The Institute supports research which addresses:

- The policies, structures and processes of the education system that best support excellent teaching and learning;
- The capacity, accountability and standards that provide the most effective context for improving teaching and learning;
- The innovative educational finance strategies that promote more efficient and equitable resources allocations for better educational outcomes;
- Innovative school design, school-based management, and other approaches and policies that improve student achievement and school performance; and
- Approaches to systemic reforms to promote higher levels of student achievement.

Consortium for Policy Research in Education (CPRE)

Title of Project: Consortium for Policy Research in Education (CPRE)—Center Overview

Principal Investigator(s): Susan Fuhrman, Consortium For Policy Research in Education (CPRE), University of Pennsylvania, PA; Harvard University, MA; Stanford University, CA; University of Michigan, MI; and University of Wisconsin-Madison, WI

Program: National Educational Research and Development Centers

Funding Level: $14,000,000. Year 1 $2.8M; Year 2 $2.8M; Year 3 $2.8M; Year 4 $2.8M; Year 5 $2.8M; plus $450,000 in supplements in Year 2 to further support dissemination, the Title I portion of Project A-2 on Reconstitution and a School-to-Work component of Project B-1; total award is $14,450,000.

Project Period: 3/1/96–2/28/01

Project Design: The Consortium for Policy Research in Education (CPRE) was funded in March 1996 to conduct a 5-year coherent program of education research and development under the National Center on Increasing in the Effectiveness of State and Local Reform Efforts. The Center's mission is to improve the effectiveness of education reform through research. The research agenda is designed to address the need for sound knowledge of those who must make practical choices about policies likely to produce improved student outcomes.

Several key assumptions about educational reform drive the research agenda. CPRE assumes that reform should: (1) focus on teaching and learning, (2) create a coherence of policy and practice around that focus, (3) incorporate individual and organizational incentives, and (4) enhance the capacity of people and institutions.

The research program is organized into three major program areas:

School Reform: A major shortcoming of past reforms is failure to connect broad policies with the core of education that takes place every day within schools. Three projects in this research area will advance knowledge, and improve its relevance for practice, by concretely linking reform policies with teaching and learning. Three studies will examine how schools can be changed to improve instruction for students, how to deal with schools that consistently fail to meet expectations, and how to effectively scale-up reforms.

Policy and Governance: Research in this area will study the implementation of standards-based reform "from Congress to the classroom." Four studies in this area will be more sensitive than earlier research to the varied contexts in which reforms are implemented and will attend more carefully to the influence of nongovernmental actors. Several new reform strategies will be explored, including large-scale shifts in authority between states and districts, private sector contracting as a management tool, and various types of student incentives.

School Finance: School reform today demands a different kind of school finance knowledge. CPRE research will move the field of school finance beyond its traditional emphasis on the equitable distribution of dollars across districts toward a focus on how resources can produce high levels of achievement for all students at the school level. Studies will design a school-based finance system, consider how the concept of "adequacy" (i.e., sufficient resources to achieve some educational outcome) can be used in finance formulas, and examine how teacher compensation can be tied more closely to reform.

CPRE's research includes 10 projects which use a variety of research approaches and methods. CPRE management encourages integration across projects in a variety of ways: projects are thematically related (e.g., issues such as capacity building and the use of incentives cut across projects) and center-wide meetings encourage discussion of relationships among projects.

Educational Significance of the Study: At a time when education reform is at the top of the national policy agenda, CPRE's research provides invaluable assistance to policymakers in developing concepts and strategies, getting feedback on implementation, making necessary adjustments, and relating their actions to student outcome effects. The research design considers both systemic issues and specific strategies that show promise.

Status of Study and Products: CPRE is in its third year of a 5-year grant period. Numerous dissemination activities and products will be targeted to specific audiences.

CPRE estimates that during its previous 5-year grant they participated in 1,540 events directly reaching over 100,000 policymakers, practitioners, educators, parents, researchers, and media representatives. Plans for this grant period include:

- Collaborative meetings with national organizations;
- Meetings in partnership with ECS;
- Affiliated organization meetings;
- Congressional seminars;
- Participation in meetings of national associations;
- Topical forums and seminars with researchers and policymakers;
- Regional policy workshops; and
- Technical assistance.

Written and broadcast materials:

- Policy and research briefs;
- Research reports;
- Occasional papers;
- Policy bulletins;
- Articles, chapters, and books;
- Documents-in-progress and working papers;
- Web pages containing research information and publications *(http://www.upenn.edu/gse/cpre)*; and
- Media presentations and interviews.

OERI Contact: Elizabeth Demarest, 202–219–2217

Title of Study: Accountability for Results, Capacity for Reform

Principal Investigator(s): Richard Elmore, Harvard University, MA; David Cohen, Brian Rowan, Deborah Ball, University of Michigan, MI; and Martin Carnoy, Stanford University, CA

Program: National Educational Research and Development Centers: Consortium for Policy Research in Education (CPRE)

Funding Level: $4,774,548. Year 1 $908,386; Year 2 $939,069; Year 3 $948,779; Year 4 $981,199; Year 5 $997,115

Project Period: 3/1/96–2/28/01

Project Design: This project will study how schools of different types—such as public schools and charter schools—and in different policy contexts develop a sense of accountability to their clients to produce high-quality instructional results and how they develop the capacity to deliver such instruction.

Questions:

- How do schools of various types understand the incentive structure in which they work?
- What kinds of abilities and organizations are needed to develop and deliver high-quality teaching and learning?
- How do rules, policies and informal understanding affect a school's sense of accountability and its ability to deliver good teaching and learning?

The study will utilize six interrelated research activities: (1) seminars and policy forums to identify the best new thinking in the areas to be studied; (2) secondary analyses of three large databases (NELS 88, LSS, and CCRS) to determine on a broad scale how the studies' variables are configured; (3) field studies of schools over a 2-year period gathering qualitative and quantitative data; (4) a survey of teachers and administrators based on field work and the large scale data set already analyzed; (5) a large-scale longitudinal survey of elementary and secondary schools engaged in reform to test lessons learned from the case studies; and (6) a report that combines data from all the above sources.

Educational Significance of the Study: This study focuses on school reform, and the role of policy in school reform. The success of school level reform depends on schools accepting accountability for student outcomes and on schools developing the capacity to produce those outcomes. This study will investigate and show the connection between policies designed to improve schools efforts to meet these challenges and will also reveal ways in which such policies interfere with those efforts.

Because the study addresses the critical link between policies and practice, it will be of use to both policymakers and practitioners in helping them work within their respective worlds, and also understand and work with each other.

Status of Study and Products: The study is divided into two main projects. The first—accountability for results—has finished the first year of field work and has held a meeting with administrators and teachers to discuss results and refine second year fieldwork. A paper on cross cutting themes is being circulated in draft form and a prospectus for a collection of case studies has been sent to a publisher.

The second project—capacity for reform—has focused on developing a conceptual framework for instructional capacity (to be published in the *Handbook for Research on Teaching*) based on capacity as an interactive and dynamic property rather than the ability of individuals or organizations. The study is currently surveying the field of external, comprehensive providers that target poorly served students. A small group of these providers will be chosen that represent a wide range of possible reform approaches. Finally, the study is developing data collection instruments based on their conceptual work and site visits.

OERI Contact: Ron Anson, 202–219–2214
Elizabeth Demarest, 202–219–2217

Title of Study: Reconstitution as a Remedy for School Failure

Principal Investigator(s): Jennifer O'Day, University of Wisconsin-Madison, WI

Program: National Educational Research and Development Centers: Consortium for Policy Research in Education (CPRE)

Funding Level: $176,928. Year 1 $66,287; Year 2 $64,032; Year 3 $46,609; plus $100,000 supplement in Year 2 totals $276,928

Project Period: 3/1/96–2/28/99

Project Design: While this study focuses on reconstitution as an accountability strategy for failing schools, it will also address the design of incentive systems and capacity building. Reconstitution occurs when an agent external to a school intervenes in response to persistently low student results by replacing the school leadership and at least a portion of the teaching staff. The action is premised on all students' rights to an education and a recognition of the failure of specific schools to provide it.

Questions:

- How is reconstitution used as a strategy for failing schools? Why are some schools chosen for reconstitution and not others? What opportunities for improvement are provided for improvement prior to reconstitution?
- What are the effects of reconstitution on the school environment, instruction, and learning in the reconstituted schools? Does the new staff differ qualitatively from those replaced? Are schools safer and is instruction better as a result? What other factors influence the results (e.g., professional development, teacher recruitment efforts)?
- What are the effects of the reconstitution processes on other participants in the district (e.g., labor unions, other nonreconstituted schools)?
- What are the links between reconstitution and Title I school improvement?

This 3-year project will be based primarily upon case study data with the school as the primary unit of analysis. Field work will take place in six schools in three states: California, Illinois, and New York. One or more national forums will help define the issues and an electronic network of individuals interested in reconstitution will be maintained.

Educational Significance of the Study: Although reconstitution has become increasingly popular as a strategy for dealing with failing schools, there is a vacuum of research available concerning its implementation and effects. This study will provide the first objective, empirical data and analysis in this controversial area. Recognizing the significance of this study for Title I, ESEA, the Department's Planning and Evaluation Service has agreed to add $300,000 to study the relationship of reconstitution efforts and the Title I program ($100,000 added to award to date).

Status of Study and Products: Field work will begin in Spring 1998. A forum that was held to define the issues took place in 1997.

OERI Contact: Elizabeth Demarest, 202-219-2217

Title of Study: Going to Scale: Building Effective Infrastructure

Principal Investigator(s): Thomas Corcoran, University of Pennsylvania, PA

Program: National Educational Research and Development Centers: Consortium for Policy Research in Education (CPRE)

Funding Level: $521,040. Year 1 $56,122; Year 2 $49,332; Year 3 $165,394; Year 4 $106,453; Year 5 $143,739

Project Period: 3/1/96–2/28/01

Project Design: The issue of how to bring education reforms to scale is the focus of this study. While education improvements may seem to work on a limited basis, they don't tend "to travel" easily to other places. There is no coherent theory to guide efforts to scale up reform in education. Competing partial theories stress either research and development (knowledge utilization), standards and accountability (incentives and sanctions), decentralization of decisionmaking (empowerment), professionalization of teaching (setting standards of practice), or markets (competition).

There are a few recent empirical studies about how, and on what grounds, schools and districts decide to adopt particular reforms, and how districts attempt to spread the use of reformed practice among schools. These questions need reexamination in light of the active marketing of "research-based" whole school reforms. Nor is much known about what the "vendors" of these whole school models are willing to be held accountable for or how districts or schools hold them accountable.

Questions:

- Why is it so difficult to achieve reform on a large scale?
- How are decisions about adoption of reforms made at the district and school level?
- How do different approaches taken by districts and states to scaling up reforms affect these decisionmaking processes?
- What are vendors of whole school reforms accountable for, and how are they held accountable?
- What are the effects of alternative approaches?

The study will combine original case studies with reanalysis of existing evaluations. CPRE will study three districts using different approaches to the problem of scaling up (Broward County, FL; Cincinnati, Ohio; and Philadelphia, Pennsylvania). Also, data collected for the evaluation of the National Science Foundation (NSF) State Systemic reform initiative will be reanalyzed and some supplemental interviews will be conducted.

Educational Significance of the Study: The need for better approaches to scaling up improvements is generally recognized as a key issue in education reform. The insights provided by this study should help policymakers and practitioners at all levels to do so more effectively in the future.

Status of Study and Products: Data analysis and interviews related to NSF's Systemic State Reform have been completed. Data collection in the three districts is underway. Products:

Report on Scaling Up Strategies Employed by the State Systemic Initiatives, late 1998.

Report on Scaling Up in Three Districts, late 1999.

OERI Contact: Ron Anson, 202–219–2214

Title of Study: State and Local Education Reform Policy

Principal Investigator(s): Margaret Goertz, Diane Massell, University of Pennsylvania, PA; Robert Floden, and Suzanne Wilson, Michigan State University, MI

Program: National Educational Research and Development Centers: Consortium for Policy Research in Education (CPRE)

Funding Level: $394,046. Year 1 $103,804; Year 2 $73,825; Year 3 $76,524; Year 4 $76,243; Year 5 $63,651 (plus $200,000 supplement in Year 2 for a total of $594,046)

Project Period: 3/1/96–2/28/01

Project Design: The purpose of this study is to examine the progress of education reform "from Congress to the classroom." In the last 5–10 years, the federal government, states, districts, and nongovernmental participants (e.g., professional organizations, foundations and other private organizations), have taken unprecedented steps to raise the quality of teaching and learning by developing challenging academic standards and new assessments designed to encourage thinking.

Questions:

- What is the content of standards-based reform and how does it vary across states, districts, and schools?
- How coherent is reform policy, both within levels of government and up and down the system? How do policies and practices of governmental and nongovernmental participants throughout the system interact to affect reform and build capacity? Do reform policies offer teachers coherent advice about instruction?
- What is the interaction between policy and classroom practice? What is it about the dimensions of teaching that makes it difficult for teachers to change? How can change at the classroom level effectively take place?

This is a 5-year longitudinal case study including 8 states and 24 school districts. More intensive case studies in 12 of these districts will focus on the impact of reform on the education of children with special needs. Data collection methodology includes interviews with state policymakers, professional development providers, school district administrators, and school staff. Interviews are supplemented with observations of administrators and teachers in each of the 12 intensive case study districts.

Educational Significance of the Study: The findings will help reformers both inside and outside the government to reflect on the goals of reform and to understand its actual effects. Such insights should help reformers to make midcourse corrections and design better capacity building and incentive strategies.

OERI funding has been supplemented by grants from the Pew Charitable Trusts and the Annie E. Casey Foundation.

Status of Study and Products: State level field work has been completed and a cross-site analysis meeting took place in June 1997. Phase two of the study—school and district case studies—is now underway.

A first-year report, "Building Capacity for Reform: The Role of the States," has been completed in draft form.

OERI Contact: Elizabeth Demarest, 202–219–2217

Title of Study: New Regimes in Education Governance

Principal Investigator(s): Michael Kirst, Stanford University, CA

Program: National Educational Research and Development Centers: Consortium for Policy Research in Education (CPRE)

Funding Level: $578,637. Year 1 $97,995; Year 2 $108,331; Year 3 $108,897; Year 4 $135,954; Year 5 $127,460

Project Period: 3/1/96–9/30/01

Project Design: This project will study large-scale alterations in the allocation of authority within and between states and districts, such as charter schools in Arizona and Michigan and mayoral takeover of schools in Chicago and Boston.

Questions:

- How do "regime" changes affect policy?
- How do mayoral takeovers of schools come about?
- How do local districts respond to changes?
- How do the regime changes interact with other factors?
- What policy theories underlie large-scale governance and institutional approaches?

The study will develop conceptual papers to provide a framework for a series of case studies based on historical data and interviews with key decisionmakers in Arizona, Michigan, Boston, and Chicago.

Educational Significance of the Study: The study will shed light on a major shift in control of American education in numerous settings. The results should provide useful information for other policymakers interested in developing new governance approaches to improve education.

Status of Study and Products: Drafts of the conceptual paper on mayoral takeovers have been circulated and commented on. The historical review of Chicago has been completed; interviews in all four sites are ongoing with all but the Boston draft case study completed. A comparative paper for charter school governance was competed and presented at AERA. A comparative paper on the mayoral takeovers in Chicago and Boston is being produced.

OERI Contact: Ron Anson, 202–219–2214

Title of Study: Contracting as a Management Tool in Education

Principal Investigator(s): Jane Hannaway, Urban Institute, Washington, DC

Program: National Educational Research and Development Centers: Consortium for Policy Research in Education (CPRE)

Funding Level: $297,911. Year 1 $51,250; Year 2 $36,000; Year 3 $57,429; Year 4 $77,119; Year 5 $76,113

Project Period: 3/1/96–9/30/01

Project Design: Many school districts, particularly in urban areas, are looking for radically different ways to manage and improve their educational enterprise. One strategy being used more frequently is contracting for educational services from private firms, either to completely run schools or for specific services. Private companies are reportedly managing over 100 schools serving 75,000 students. The purpose of this study is to document and study the effects of these experiments.

Questions:

- What are the provisions of the contracts between school systems and private firms? To what extent do contracts include incentives based on student performance? How clearly are performance criteria specified? What are the incentives for school districts to enter such contracts? What interests are represented in contract provisions? In what areas do firms retain discretion and in what areas is their behavior constrained?
- How do contracts shape school level behavior? How do staffing patterns compare to other schools in the same district? How do other school resource allocation patterns compare to other schools in the district? How do contracts affect the political behavior of interest groups in the districts? What are the consequences for student performance?

The first stage of the study involves analysis of contractual documents according to protocol developed from ideas in industrial organizations theory. The second stage of the research focuses on six indepth longitudinal case studies of contract schools with different firms. Interviews will be conducted with school board members, the superintendent, the school principal, a representative of the firm and a union representative. Focus groups with teachers and parents will also be conducted. In addition, an archival record will be established based on newspaper accounts, formal amendments to the contract, and reports submitted to the district by the firm. In addition, performance data collected as part of the contract agreement will be analyzed.

Educational Significance of the Study: There is a vacuum of research about this new tool for education reform. This CPRE study will be the first to provide policymakers and practitioners with some basic information about the strategy.

Status of Study and Products: Much of the document analysis has been completed. Two papers on the first stage of the study have been presented, one at the Association for Public Policy Analysis and Management meetings and one at the AERA meetings. A policy brief is being drafted. Site visits are being scheduled over the summer (at the firm level) and in the fall (at the school level).

OERI Contact: Elizabeth Demarest, 202–219–2217

Title of Study: Student Incentives

Principal Investigator(s): Margaret Goertz, Robert Zemsky, and Daniel Shapiro, University of Pennsylvania, PA; John Bishop, Cornell University, NY

Program: National Educational Research and Development Centers: Consortium for Policy Research in Education (CPRE)

Funding Level: $955,309. Year 1 $58,594; Year 2 $290,073; Year 3 $61,601; Year 4 $209,058; Year 5 $335,982

Project Period: 3/1/96–2/28/01

Project Design: This project is conducted by the Consortium for Policy Research in Education (CPRE) in collaboration with the National Center for the Educational Quality of the Workforce (EQW) at the University of Pennsylvania and with Cornell University. The research work at EQW and Cornell University is sponsored by the National Center for Postsecondary Improvement (NCPI) at Stanford University.

Questions:

- How could employers hiring practices and standards affect students incentives to learn? Do students work harder at school if they know more about job skill requirements in the marketplace? Do adults' own workplace experiences affect their beliefs about the importance of learning, in and out of school?

- Do employers' views of schools and student preparation vary according to state reform context?

- Across different societies, do secondary school examinations (an objective means for employers and colleges to judge student preparation) contribute to higher achievement and to economic payoffs?

This project uses various methodologies including surveys, data analysis, and multiple regressions. The projects two substudies are:

- Project B–4a. Connecting School and Work (Robert Zemsky, Daniel Shapiro, Amy Johnson, and Margaret Goertz):

  This project is designed to address issues concerning the connection (or disconnection) between school and work by building on the efforts during the past 5 years of the National Center on the Educational Quality of the Workforce (EQW) and the National Employers Survey. The project will entail the development of 3 new national surveys, to be administered by the Bureau of the Census and developed by EQW in partnership with CPRE: a National Employers Survey, a National Employees Survey, and a National Survey of Heads of Households aged 35–55. These surveys will provide useful data and information on how employers, employees, and families invest in training and work-related education.

- Project B–4b. The Impacts of Curriculum-based Examination Systems (John Bishop):

  This project will use the data from the Third International Mathematics and Science Study (TIMSS) to study the interactions of curriculum based examinations, institutional characteristics, and other education policies. The study will develop models to assess the impacts of curriculum based examinations and to test five hypotheses about changes in the relative achievement levels in mathematics and sciences, in opportunity to learn and student effort indicators such as homework time. Multiple regression model and other econometrics methods will be used for the analysis.

Educational Significance of the Study: The productivity of American businesses is intrinsically linked to the success of the nation's schools and the educational attainment of its students and workers. This reliance will require that firms articulate their skill needs to schools. Similarly, to dismiss schools from their share of the responsibility is to lessen the capacity of American enterprises and American workers to compete successfully in an increasingly challenging global economy. However, recent studies have shown disconnection between schools and business that seems to weaken the global competitiveness of the nation. The results of this project, based on the National Employer Survey and the National Employee Survey (with supplemental questions on state education reform), will help educational policymakers and business leaders better understand the disconnection and find effective ways to connect school to work. Findings from the second substudy will shred some light on whether rigorous curriculum-based examination system will send better signals to teachers, parents, college admission offices, and employers and force students to learn harder and more at schools.

Status of Study and Products:

- Report on relationship of use of national curriculum-based examination systems and student achievement in math and science; and first round site visit to four Canadian provinces (12/96).

- Coordination with the Bureau of the Census in the design and sampling of the Employer Survey; and reports from previous surveys (7/96-1/98).

- Report on analysis of TIMSS data and Canadian study of curriculum-based exams (1/98)

- Preliminary analysis of the Employer Survey; interim report on findings; and policy brief (2/98–7/98).

- Survey of national sample of employees; analysis of employer and employee surveys; survey data; and interim report on findings (2000–01).

OERI Contact: Duc-Le To, 202–219–2248

Title of Study: Redesigning School Finance

Principal Investigator(s): Allan Odden, University of Wisconsin-Madison, WI

Program: National Educational Research and Development Centers: Consortium for Policy Research in Education (CPRE)

Funding Level: $987,013. Year 1 $223,498; Year 2 $179,044; Year 3 $189,548; Year 4 $193,926; Year 5 $200,997

Project Period: 3/1/96–9/30/01

Project Design: The purpose of this 5-year policy design project is to design a revised school finance system, appropriate for a variety of site-based, higher performance, school reform initiatives. The project has three integrated aspects: redesign of state/school finance structures, studies of school-based financing, systems, and studies of resource reallocation at the school site level.

Questions:

- How can finance policy be more closely linked to reform policy, which focuses on the school as the unit of improvement?
- What are the equity, adequacy, and productivity implications of alternative approaches to school-based funding?
- How can education dollars be reallocated to support higher performance.

This project collects data from surveys of the 50 U.S. states and case studies of school districts in the United States, Canada, England, and Australia. Survey data and information collected from the field studies will be analyzed to understand recent changes in school finance systems, efforts of aligning school finance to education reform, and resource reallocation accomplishments and processes. The project will also commission conceptual papers and conduct analyses of conceptual school finance structures. To evaluate the possible impacts on equity and other educational outcomes, it will also use the price/need index developed by Program Adequacy Project and other models to conduct simulations of alternative school (funding) approaches. To learn from the experiences of other countries, England and Australia are added to the project's field studies sample.

Educational Significance of the Study: Traditional school finance strategies are inadequate for ensuring educational excellence and equity. Recent school finance court cases show large disparities in funding and the disconnection between school finance and standards-based education reform. By exploring alternative school funding formulas and conducting surveys and international case studies, this project will help policymakers better understand how the structural features of various current school funding formulas impact school finance equity and most important—adequacy—and how the current system can be modified toward structural changes needed in the near future. Findings of this project will also help redesign education finance system and make it compatible with the needs of school standards-based education reform.

Status of Study and Products:

- Commissioned papers to discuss conceptual issues related to designing a school-based financing system completed (3/97).
- Policy design monograph for enhancing current school finance structures completed (2/98).
- Survey of each of the 50 states on how they finance charter schools programs (10/97).
- Book chapter on school-based formula funding strategies in several large urban areas in the United States and Canada (2/98).
- Reports on school-based funding systems on England and Victoria, Australia (6/97).
- Paper/article on school finance as aging structures in need of change, and suggestions for change (8/97).
- Policy brief on redesigning state finance and district budgetary systems (4–6/98).
- School studies of reaction to and impact of school-based financing, including resource allocation in several U.S. districts, schools, and summaries of research in England (12/98).
- School studies on impact of school-based financing, including resource allocation in schools and districts, and summary of research as such issues in Australia (12/99).
- Analyses of simulations of school-based financing and policy brief (5/00).
- Summary book and policy brief on designing a school based financing system in the United States (5/01).

OERI Contact: Duc-Le To, 202–219–2248

Title of Study: Program Adequacy

Principal Investigator(s): William Clune, Andrew Porter, and Andrew Reschovsky,
University of Wisconsin-Madison, WI

Program: National Educational Research and Development Centers: Consortium for Policy Research in Education (CPRE)

Funding Level: $663,517. Year 1 $137,795; Year 2 $142,237; Year 3 $151,972; Year 4 $110,601; Year 5 $120,912

Project Period: 3/1/96–9/30/01

Project Design: This 5-year project addresses issues concerning program adequacy a new concept of school finance focusing on providing adequate resources to teach all students to high-learning performance standards. The project will study three interrelated issues: costs and effects of various school strategies to teach students to adequate levels; costs of providing adequate programs for low income and other needy children; and measurement of the enacted curriculum as a resource provided to students.

Questions:

- What is the concept of program adequacy? How could we define program adequacy so that we know how to ensure that disadvantaged and special education students in high-poverty schools will get adequate educational resources to meet state learning standards?
- How much does it cost to provide adequate resources to support programs for low-performing disadvantaged students to meet learning standards?
- How could we measure what is actually taught in schools, (i.e., the enacted curriculum)?

This project uses various research methodologies, including surveys, case studies, and multiple regressions. The projects three substudies are:

- Project C-2a. Costs and Effects of Successful Programs Serving Students in High-Poverty Communities (William Clune):

  The purpose of this substudy is to push the knowledge base on the costs and effects of school programs designed to serve high-poverty schools. The study will review the cost-effectiveness literature that exists, synthesize the current conclusions from this literature, and then determine what next can be done to produce more cost, effects, and cost-effectiveness information for programs designed to teach students in high-poverty schools to higher achievement levels.

- Project C-2b. Costs of Providing Adequate Program Services to All Students As Well As Low-Income Students and Other Students with Special Needs. (Andrew Reschovsky):

Using the economic "cost function" methodology, the purpose of this substudy is to develop a cost index that reflects the geographical cost differentials and the additional costs that a school district incurs in order to provide an adequate level of program services to teach all students to specified achievement levels. The substudy intends to use such a cost index to adjust school finance formulas to provide each school district with sufficient revenue to produce specific educational outcomes (level of student achievement).

- Project C-2c. Measurement of the Enacted Curriculum (Andrew Porter):

  This study builds upon the methods used by Porter and CPRE colleagues investigating how increased standards in high school math and science affected the content of instruction that students received at curriculum that is actually delivered. The goal is to use the most recent instruments developed for middle and high school math and science, adapt them for elementary math and science, and then further modify extant instruments in foreign languages and history at three different school levels. Up to 12 survey instruments will be developed at all 3 school levels in 4 subject areas: math, science, language and history.

Educational Significance of the Study: Recent school finance court cases have shifted the focus of school funding from traditional equity issues such as funding disparity to the new concept of program adequacy. Several states' school funding mechanisms have been ruled unconstitutional by state courts because they do not provide some school districts adequate resources that are needed for achieving equitable educational outcomes. Despite all the efforts that state officials, legislators, lawyers, and researchers made in redesigning state funding systems trying to comply with the court rulings, no one has a clear concept and definition of "adequacy." Nor do they know a practical way to measure it. The results of this project will help states get some consensus among constituents of their school systems on the definition of program adequacy, or at least to get some kind of agreement on the concept and measurement that provide them with some guidelines or ideas on how to redesign their school funding systems to provide equitable educational outcomes that meet the acceptable, minimum state academic achievement standards for all students.

Status of Study and Products:

- Article on cost/need index for Wisconsin and impact on school finance; preliminary synthesis of research findings on cost effective research related to education adequacy; article on the EDP argument for educational adequacy, the gaps as the knowledge based, and research agenda; the extent of the knowledge gap; and elementary mathematics and science EC survey instruments (5/97).

- Article on cost/need index for Texas and impacts on school finance; policy brief on cost and effects of programs for low-income students and research design report on how to produce new research results; and elementary school language, arts, and history EC survey instruments (8/98).

- Article on cost/need index for Missouri and impacts of school finance; policy brief on cost/need index research and implications for school finance; and middle school language, arts, and history EC survey instruments (5/99).

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- Article and policy brief on the design of funding of effective education for the disadvantaged given existing need and available funds; and high school language, arts, and history EC survey instruments (5/00).

- Synthesis manuscript on various ways to define, structure and finance an education program that is "adequate"; and synthesis of accomplishment in collecting data on the enacted curriculum and suggestions for future developmental work (5/01).

OERI Contact: Duc-Le To, 202–219–2248

Title of Study: Changing Teacher Compensation

Principal Investigator(s): Carolyn Kelley, Herbert Heneman III, and Tony Milanowski
University of Wisconsin-Madison, WI

Program: National Educational Research and Development Centers: Consortium for Policy Research in Education (CPRE)

Funding Level: $1,085,057. Year 1 $204,787; Year 2 $244,483; Year 3 $222,123; Year 4 $217,649; Year 5 $196,015

Project Period: 3/1/96–9/30/01

Project Design: The purpose of this 5-year project is to identify alternative teacher salary approaches that provide incentives to a school's faculty to improve student achievement, and also to provide incentives to teachers to enhance their knowledge in subject matters and learn new skills to improve their teaching.

Questions:

- What are the key features of these alternatives teacher compensation programs?
- How do such programs affect teacher professional development and teaching practices?
- How do teachers and other stakeholders react to these programs?
- What impact do these programs have on student and teacher performance?

The project begins with the study of school-based performance awards programs in the first 2 years and follows by studying knowledge- and skill-based programs in the 3rd and 4th years.

The project conducts case studies and administers surveys at the state, district and school levels on teacher compensation, with a special focus on the design and impacts of performance awards programs and competency-based compensation programs, and an assessment of how these compensation innovations interact with other elements of education reform including professional development and school based management and leadership. With other funding, the project is working with teams of management and union (both AFT and NEA) leaders at the state and district levels to design and implement new forms of teacher compensation.

Educational Significance of the Study: Teacher compensation is the largest expenditure item that accounts for 50 percent of the school budget. But little research has been done to study how incentives, sanctions, and rewards could be built into current teacher compensation systems to support professional development and to improve classroom teaching and learning. This project works with districts and states to identify existing teacher compensation/rewards programs and to explore ways to change teacher compensation systems to support education reform. Research findings and information collected from this project will be used as a basis for the redesign of teacher compensation systems.

Status of Study and Products:

- Field research instruments were developed, revised, and administered in the three selected sites: Kentucky (10/97), Charlotte-Mecklenburg (6/97), and Maryland (Spring 98).
- Article on Kentucky was submitted and published. Kelley, Carolyn, and Jean Protsik. "Risk and Reward: Perspectives on the Implementation of Kentucky's School-Based Performance Award Program." Educational Administration Quarterly 33(4), 1997. Others in progress.
- Papers on Kentucky and Charlotte-Meckenburg research presented at AERA and IRRA in Spring 1997 and submitted to OERI. The Kelley paper is forthcoming in Educational Policy and Heneman paper is forthcoming in the Journal of Personal Evaluation in Education.
- Conference on Competency-based Pay held May 1997 in Madison, Wisconsin.
- Qualitative studies completed in Kentucky and Charlotte-Meckenburg. Long-term research plan for these two sites will be developed in Summer 1998. Draft of Maryland case study report is underway (early 1998).
- Analysis of available survey data is in progress.
- Across site report on Performance Awards: draft expected 9/98. Ready for publication 11/98.
- Policy Brief on Performance Awards: draft expected 10/98. Ready for publication 12/98.
- Plan for case studies on knowledge and skill based compensation is underway.
- The Project sponsored a 2-day forum in 9/97 in Chicago on technical issues related to assessing individual teachers to external professional standards and use of the results in new compensation structures. Commissioned papers from the papers will be published in Journal of Personnel Evaluation in Education (forthcoming, 12(2), 1998).

OERI Contact: Duc-Le To, 202–219–2248

The National Center for the Study of Teaching and Policy (CTP)

Title of Project: The National Center for the Study of Teaching and Policy (CTP)—Center Overview

Principal Investigator(s): Michael Knapp, The Center for the Study of Teaching and Policy, University of Washington, WA

Program: National Educational Research and Development Centers

Funding Level: $7,498,193. Year 1 $1,499,570; Year 2 $1,499,357; Year 3 $1,499,344; Year 4 $1,500,00; Year 5 $1,499,992

Project Period: 10/1/97–9/30/02

Project Design: Any effort to produce excellence in teaching on a broad scale must solve five interrelated policy problems. It must: (1) attract, recruit, and retain capable people in the teaching profession; (2) develop teachers' professional norms, knowledge, and skill; (3) create incentives and organizational conditions that support teachers' work; (4) realize improvement efforts on a sufficient scale, and do so equitably, within a diverse, fragmented educational environment; and (5) ensure that teacher development and teaching practice relate to improved student learning.

The work of the Center will examine promising experience and practices, those instances of strategic, coordinated action that most centrally address these five policy problems. There are many such experiences and experiments, but among them, four classes of reform strategy seem to offer the most helpful starting points for addressing the problems confronting teacher excellence: standards-based strategies, school-based strategies, teacher development strategies, and strategies for managing the policy environment for teacher excellence. The Center has chosen to focus on strategies, rather than component, single-purpose initiatives and on solutions, rather than continued inquiry into the nature of the problems. This focus holds the greatest hope for informing policymakers and improving the conditions of teaching. The program of research will cumulate in greater understanding, both within and across studies, regarding these strategies' potency and possibilities, through strategic contrasts among cases, large-scale database analyses, close-up examinations of effects at the classroom and school level, and other forms of investigation. Acknowledging that the Center's resources are limited, the proposed work will take maximum advantage of opportunities for extending research into these strategies through work that is already underway and partially supported by other sources, in addition to setting in motion new studies and lines of work.

The research strategy features a high degree of integration, both empirical and conceptual. Many of the proposed projects are built around a set of states, districts, schools, and institutions of higher education, which are embedded within one another in a diverse, representative "Core Study sample" that takes full advantage of the researchers' geographic diversity (those studies that are part of this core study are so noted in project descriptions). A series of other devices ensure the integration of Center members' efforts. Center members will undertake projects which are thematically related, address common questions across all projects, work with each other on combined study teams, engage in integrative analysis and synthesis, and participate jointly in dissemination activities.

Educational Significance of the Study: The work of the Center promises to provide usable information to decisionmakers on ways to improve the quality of teaching in American schools. The focus on state, district and school level changes, and the integration of changes needed across all three jurisdictional levels, will provide a system-wide picture of effective strategies to improve teaching. This is a marked improvement over past research which tended to focus on individual sectors and issues and rarely integrated findings into a system-wide set of recommendations.

Status of Study and Products: The Center has produced a booklet summarizing their proposed work: "Policy and Excellent Teaching: Focus for a National Research Center," and has prepared an historical review of federally funded research on the improvement of teaching: "Federal Research Investment and the Improvement of Teaching, 1980-1997," Julia A. Koppich and Michael S. Knapp, Center for the Study of Teaching and Policy, University of Washington, April 1998.

OERI Contact: Ron Anson, 202–219–2214

Title of Study: State Contexts for Teaching Excellence (Core Study Project)

Principal Investigator(s): Michael Knapp, University of Washington, WA; and
Linda Darling-Hammond, Teachers College/Columbia University, NY

Program: National Educational Research and Development Centers: The National Center for the Study of Teaching and Policy (CTP)

Funding Level: $1,138,144. Year 1 $275,120; Year 2 $135,435; Year 3 $241,446; Year 4 $262,705; Year 5 $299,343

Project Period: 10/1/97–9/30/02

Project Design: This study defines both a core sampling strategy and a set of state-level data-collection activities linked to district and local studies. Within the sample we set up, the study examines two central issues in the way states construct teacher policy: first, the way state level actors seek to manage the different elements and strands of the teacher policy environment; and, second, the way their efforts interact with other educational reforms, especially those aimed at student learning (e.g., standards-based reforms).

Questions:

- How does a state's approach to teaching-related policies influence teachers' access to knowledge and conditions for teaching in the state? How does the state's approach interact with other major reform efforts in education-in particular, standards-based reform (built around student standards), school-based reform initiatives, and strategies for encouraging the renewal of teacher education, but also others (e.g., related to special populations, governance)? In what ways do the multiple reform thrusts mutually reinforce one another, and in what ways do they interfere with one another?

- What are the implications of state context efforts for the learning and teaching opportunities of beginning and experienced teachers? What kind of professional development do they have access to? How do they realize or reconcile the different consequences of policy action in their work and careers? In what ways do local district, school, or institutional conditions affect the way teachers experience learning and teaching?

- What are the implications for student learning? Is there clear evidence that links the nature of the macro state policy environment with patterns of student achievement?

- What does it take to construct and sustain a coordinated strategy of investment in teacher policy from the state level? What theory of action, if any, drives state action in this regard, and what kinds of consensus have been mobilized behind it? How are the different strands of teacher-related policy (e.g., related to recruitment, licensing, teacher education, compensation, teacher standards) connected to one another conceptually, politically, and practically?

The research will be conducted in five "core" states (Washington, California, Ohio, New York, and North Carolina). Researchers will collect descriptive analyses of the states' teacher policy strategies and the interactions with other state-level educational reform efforts, using data already collected by the National Commission on Teaching and America's Future (NCTAF) and gathering more data through interviews with key state level individuals. Researchers will then conduct analyses of the conditions that support teacher learning and the outcomes of reform at sites in other Center projects in the core states. Follow-up interviews with participants at the local and school level will tie their experiences to the effects of state policy on their success. A significant part of the analyses will be the interactions of reforms designed to increase investments in teacher quality. Data will be developed from case studies, documents and interviews with key individuals in each state. Finally, analyses of the relationship between state teacher reform and student achievement patterns over time will be undertaken using extant state and national (e.g., NAEP) data to identify significant relationships.

Educational Significance of the Study: The results will tie state level policy decisions to lower jurisdiction (district, school) level decisions all designed to improve the quality of teaching. By tracing impact of state level decisions to their implemented outcomes, feedback to policymakers on more effective approaches to making policy to improve teaching will be possible.

Status of Study and Products: Initial planning phase.

OERI Contact: Ron Anson, 202–219–2214

Title of Study: District Contexts for Teaching Excellence (Core Study Project)

Principal Investigator(s): Milbrey McLaughlin, and Joan Talbert, Stanford University, CA

Program: National Educational Research and Development Centers: The National Center for the Study of Teaching and Policy (CTP)

Funding Level: $1,343,799. Year 1 $353,094; Year 2 $233,820; Year 3 $231,199; Year 4 $291,144; Year 5 $267,808

Project Period: 10/1/97–9/30/02

Project Design: This effort, in conjunction with the study of State Contexts for Teaching Excellence, and several other projects, examines the district policy context as a critical setting and opportunity for teacher excellence. In a set of districts nested within core sample states, researchers will explore how district actors interpret and mediate policies from outside district boundaries, and how, at the same time, construct a consequential local policy context for teaching, drawing on a variety of tools from routine activities (e.g., rooted in "personnel" functions) to less routine ventures (e.g., collaborating with nonformal educational actors outside the district's purview).

Questions:

- How (if at all) are priorities for teaching and learning established at the district level? What are they? Who participates in defining them? What is their authority? Are these priorities connected by a strategic vision regarding their joint relationship to teachers' work and careers?
- How do core district functions (e.g., hiring, professional development, evaluation, communication, accountability) support these priorities or not, both in conception and in practice? Do district policies, taken together, focus or diffuse espoused priorities for teaching excellence? Are various district policies consistent with one another as supports for teaching excellence?
- How does the district mediate and manage its surrounding policy environment? How does the district interpret and implement state and federal policies and programs? How does it interact with parents, the community, and the private sector around issues related to teachers and teaching? To what extent has the district built coalitions with the unions, the business community, higher education and others in support of a teaching excellence agenda?

Two district samples will be used: one holding the state constant and the second a national sample including districts that are more or less successful in providing support for improved teaching. The first sample will consist of 27 California districts (engaged in systemic reform activities supported by the Annenberg Foundation) and the second sample will be five large urban districts nested in the "Core Study sample" of the Center's work. Data collected will include observations, interviews, focus groups, a survey (in year 2 or 3) and document collection.

Researchers will collect an inventory of local, state, federal and other policies that bear upon the district. They'll identify the formal and nonformal factors that affect teaching and teachers. District factors (such as community, student and teacher SES and demographics, teacher labor force conditions, school financing, student achievement patterns) and reform histories will also be collected to provide a policy map of the district. Then links will be made between district management choices and the local context and the effect on teachers' effectiveness in the classroom and student learning, and the impact on teachers' self-appraisal of their teaching. Finally, comparisons among districts that manage the policy environment well or less well will be made, using problems they have in common as a constant.

Educational Significance of the Study: This study will be integrated with the state and school level studies to provide the essential link between state level efforts to improve teaching and district level implementation of state policies as well as the interaction of state and district policies.

Status of Study and Products: Initial planning phase for Core Study sample sites; and preliminary data collection in subset of the California sites.

OERI Contact: Ron Anson, 202–219–2214

Title of Study: State Policies to Support Teacher Excellence

Principal Investigator(s): Barnett Berry, University of South Carolina, SC; and
Linda Darling-Hammond, Teachers College/Columbia University, NY

Program: National Educational Research and Development Centers: The National Center for the Study of Teaching and Policy (CTP)

Funding Level: $136,063. Year 1 $50,457; Year 2 $77,671

Project Period: 10/1/97–9/30/99

Project Design: This project analyzes the status of teacher excellence and the corresponding teacher policy infrastructures in a cross-state, comparative way. It builds upon work already underway in developing "teacher policy inventories" in the 12 states that are partners of the National Commission on Teaching and America's Future (NCTAF). Some of these states will also be among the Center's core sample states, which provides a way to further our understanding of the way these states operate; at the same time, the larger sample of Commission states enables us to broaden what we learn in the intensively studied core sample states.

Questions:

- In what ways are the 12 partner states similar and dissimilar in their policies and operations regarding teaching and teaching conditions?
- What have been particularly productive approaches and what are their apparent effects in the short term?

A team of researchers has been working with each of the partner states, using other funds, over the past 2 years. They will take the descriptions of policies and practices in each of the 12 states and work collectively to provide the cross-state analyses which will respond to the above questions. The analysis will not only highlight more and less successful state efforts (some successful, some less so), but it will identify relative effectiveness as a function of the length of time the states have been engaged in developing coherent teacher policy strategies.

Educational Significance of the Study: This study will build on the ongoing NCTAF work, tieing that work into the work of the Center. This will enable joint analyses of findings from both efforts and provide an extensive network for dissemination and feedback on both efforts.

Status of Study and Products: Year 1 activities include preliminary cross-state analysis of teacher policy inventory reports and the identification of case study states for follow-up.

OERI Contact: Ron Anson, 202–219–2214

Title of Study: International Comparative Analysis of Teacher Development in Policy Perspective

Principal Investigator(s): Milbrey McLaughlin, Stanford, CA; David Cohen and Deborah Ball, University of Michigan, MI; and Linda Darling-Hammond, Teachers College, Columbia, NY

Program: National Educational Research and Development Centers: The National Center for the Study of Teaching and Policy (CTP)

Funding Level: $218,990. Year 2 $111,631; Year 3 $107,359

Project Period: 10/1/98–9/30/00

Project Design: This work will attempt to identify and understand how different national policy systems have been established to create comprehensive approaches to the development of skillful teaching from recruitment and preparation through opportunities for ongoing development. It seeks to put American patterns of managing the teacher policy infrastructure in international perspective, by synthesizing research-based knowledge regarding policies and practices in selected developing nations (e.g., Japan, Germany, Sweden, France) and convening a working conference of international scholars on this topic. During and following the conference, the Center team will generate an agenda for further research in this area, and create one or more designs for systemic comparison of teacher policy systems. (Center resources are not sufficient to cover actual field work.)

Questions:

- What strategies are used by other developed systems to create and support high quality teaching in their countries?
- What differences exist between these various strategies and those in place in the United States?
- How might we understand and use any lessons from these other countries to improve the quality of teaching in the United States?

Methodology for the work are:

- An extensive review of comparative educational literature that establishes what can now be claimed about the differences and similarities between American and other advanced nations' teacher policy systems.
- A working conference with invited scholars, of the caliber and work of Patricia Broadfoot from England, Alan Ruby from Australia, Nobu Sato from Japan, and James Stigler from the University of California at Los Angeles. The goal of the conference would be to pool the best thinking about current knowledge and productive lines of future research. Such a conference would produce some highly relevant papers, and possibly a book.

- The creation of one or more research designs, embedded in a more extended agenda of research questions, that would frame future studies worth doing in this domain. While the Center's current funding level would not support the conduct of such studies, we suspect it would not be difficult to raise the money to get one or more studies of this sort in motion, or to interest others in undertaking such research under different auspices. Either way the "seed" funding put into this effort through the Center would productively leverage a much needed line of research.

- A fourth, optional component would involve further analysis of existing international comparative databases (generally constructed with student comparisons in mind, though some have useful data related to teaching). Were we to undertake such work, we might involve individuals such as Harold Stevenson and David Baker, who have worked extensively with such databases in the past.

- Subject to resource constraints, we might also explore possibilities for collaborative research with scholars whom we engage in earlier phases of this work. For example, some colleagues in Sweden, Britain, and Australia have replicated Center for Research on Contexts of Teaching teacher survey items on professional development, community, and conceptions of practice. Interesting and important differences have emerged, with implications for teacher policy. There may be useful ways to pursue these kinds of leads further.

Educational Significance of the Study: With the growth of global competitiveness and the increased attention to international comparisons (international benchmarking of tests, TIMSS) it is more important than ever that the United States understand its efforts at improving education in an international perspective. This study will bring together a group of well-respected American researchers with other international researchers to help shape the conversation of America's efforts to improve its educational system with an international perspective.

Status of Study and Products: Initial planning phase will begin in Year 2.

OERI Contact: Elizabeth Demarest, 202–219–2217

Title of Study: Cost Analysis of Teacher Excellence Strategies (Core Study Project)

Principal Investigator(s): Margaret Plecki, University of Washington, WA; and David Monk, Cornell University, NY

Program: National Educational Research and Development Centers: The National Center for the Study of Teaching and Policy (CTP)

Funding Level: $267,387. Year 2 $50,814; Year 3 $65,041; Year 4 $70,878; Year 5 $80,654

Project Period: 10/1/98–9/30/02

Project Design: This crosscutting analysis, drawing from the projects subsumed within the Core Study (State and District Context studies, Study of School Organization for Teacher and Student Learning, and to a limited extent from other Center work) will explore two different issues related to the comparative costs of investment in teacher excellence. The first focuses on teacher compensation policies, and the second considers and develops more broadly, conceptual and analytic frameworks for modeling the costs and benefits of alternative strategies for enhancing teacher excellence (strategies which may include alternative approaches to compensation).

Questions:

Regarding teacher compensation systems:

- What are the types and amounts of expenditures associated with the development and implementation of each alternative compensation strategy? Who bears the cost and what types of nonmonetary factors must be considered?

- What evidence exists which associates alternative compensation strategies with improvements in teacher recruitment, retention, knowledge, skills, conditions of work, or student learning? What databases must be built in order to track effects of such compensation policies?

- What actual or potential disincentives regarding teacher or student learning are connected with each compensation strategy? How are the actual or potential disincentives distributed across teachers, students, and schools? What efforts could be considered to mitigate against possible dysfunctional consequences?

Regarding the costs and benefits of alternative teacher improvement strategies:

- What types of conceptual and analytic challenges must be addressed in order to construct fine-grained cost analyses of alternative strategies for investing in teacher development? What is the nature of the embedded or "hidden" costs in such strategies?

- What data gaps must be filled in order to accurately account for investments in teacher development so that cost-benefit studies can be appropriately conducted?

- What do preliminary analyses of the most promising investments in professional development suggest for the design of future cost comparisons?

- What methods are appropriate for assessing benefits associated with professional development activities, specifically in relation to improved teacher knowledge and skills, conditions of work, and student learning?

- How might assessments about the equitable distribution of benefits from strategies of investing in teacher development be constructed?

- What systems can be designed to track the long-term effects of sustained teacher development?

- Utilizing improved techniques for estimating the costs and benefits of alternative teacher investment strategies, what claims can be made about the relative costs and benefits of these strategies?

States and districts in the Center's Core Study sample will be inventoried for examples of alternative teacher compensation strategies. The effects of these strategies will then be analyzed comparatively. The costs and benefits of various teacher policy strategies will be analyzed and reported. Data will include school, district and state budgets, school and district data on teacher recruitment and retention, student mobility and achievement data, and data from other Center studies on teachers' knowledge, skills and work conditions. Exploratory analyses will be done to develop evidence of impact and also to develop better conceptual and empirical tools for appraising the cost of policies aimed at teacher excellence.

Educational Significance of the Study: This study will address the cost of various approaches to reforming teaching, an ongoing concern of most policymakers.

Status of Study and Products: Initial planning phase (main work takes place in Years 2–5).

OERI Contact: Duc-Le To, 202–219–2248

Title of Study: Teachers' Opportunities to Learn, Student Achievement, and Alternative Approaches to Reform

Principal Investigator(s): David Cohen, Deborah Ball, and Brian Rowan, University of Michigan, MI

Program: National Educational Research and Development Centers: The National Center for the Study of Teaching and Policy (CTP)

Funding Level: $1,111,026. Year 1 $210,048; Year 2 $230,671; Year 3 $184,079; Year 4 $70,878; Year 5 $80,654

Project Period: 10/1/97–9/30/02

Project Design: This study builds on an OERI/CPRE-funded study (Accountability for Results, Capacity for Reform) of how several approaches to school reform build instructional capacity, especially in high-poverty schools. This study will build on the OERI/CPRE study by expanding and deepening the focus on the relationship between teachers' opportunity to learn, teachers' practice, and student achievement, in a large sample of elementary schools (between 40 and 50).

Questions:

- Can focused professional development opportunities be more definitively linked to both improvements in classroom practice and greater student learning?
- Are particular reform approaches, or implementation strategies within approaches, associated with successful professional development opportunities?
- How can such opportunities be designed, supported, and institutionalized?
- Though many major strands of reform include some sort of professional development, what are their comparative advantages and disadvantages in promoting the type of teachers' Opportunity to Learn (OTL) that is positively related to student achievement? Which approaches do a better job and why?
- Finally, do professional community and school context affect the relationships? Do stronger professional communities promote more or better teachers' OTL? Do schools' social and policy environments affect the relations between teachers' OTL, the reform approach and student learning?

The study address five elementary school interventions: Success For All, The School Development Program, Core Knowledge, Accelerated Schools, and standards-based reform, in addition to continuing work math/professional development efforts in California. Because this study will include work being funded elsewhere, approximately 150 schools will be studied. The study will investigate teachers' opportunity to learn new knowledge, norms, and expertise; the links between improved teaching and student learning; and issues of recruitment and retention, conditions of teaching, scaling up, and managing the environment. Data will be collected through surveys and interviews, and assessments.

Educational Significance of the Study: By taking advantage of parallel funding of this project, the results promise to provide evidence of whether and how policy as an instrument to improve teaching actually leads to improved teaching and subsequently to improved student achievement. The key element hypothesized for this to happen is providing teachers the opportunity to learn. The results of the study could redirect a wide range of policies and practices that are seemingly ineffective (i.e, traditional professional development) toward critical variables that underlie real improvement in teaching and learning.

Status of Study and Products: Initial planning phase (instrument design, sample plan development, pilot work in several schools).

OERI Contact: Elizabeth Demarest, 202–219–2217

Title of Study: Building Capacity for Ambitious Pedagogy and High Student Achievement in Urban Schools

Principal Investigator(s): Edward Silver, University of Pittsburgh, PA

Program: National Educational Research and Development Centers: The National Center for the Study of Teaching and Policy (CTP)

Funding Level: $200,785. Year 1 $95,486; Year 2 $105,299

Project Period: 10/1/97–9/30/99

Project Design: Building on a rich 5-year longitudinal data set (QUASAR), this analysis will extend knowledge of how teaching excellence can be promoted in high-poverty middle schools through long-term engagement with intellectually rich support networks. This work parallels what will be done in the "Teachers' Opportunities to Learn, Student Achievement, and Alternative Approaches to Reform Project," only at a different level, and with an existing 5-year data set that permits a number or important longitudinal questions to be answered early in the Center's 5-year cycle.

Four different analysis of the data set are proposed, with a minimum of two being conducted: Analysis 1—policies and practices associated with quality teaching and learning; Analysis 2—the utility of a policy perspective as a lens for viewing effective practice; Analysis 3—understanding the interplay between support and accountability; and Analysis 4—dealing with teacher turnover in capacity-building efforts.

Educational Significance of the Study: These analyses will provide a rich counterbalance to work being done elsewhere in the Center using different data. The researcher has worked for many years with the QUASAR data and will be able to draw distinctions and differences between his findings and those of other Center researchers using the Center's data set.

Status of Study and Products: Analysis of one exemplary school is underway, as an initial case in which a high degree of teacher change and student improvement took place. Further analyses in other QUASAR sites will follow in Year 2.

OERI Contact: Elizabeth Demarest, 202–219–2217

Title of Study: Organizing Schools for Student and Teacher Learning (Core Study Project)

Principal Investigator(s): Jon Snyder and Linda Darling-Hammond, Teachers College/Columbia University, NY

Program: National Educational Research and Development Centers: The National Center for the Study of Teaching and Policy (CTP)

Funding Level: $413,615. Year 2 $147,184; Year 3 $136,149; Year 4 $130,282

Project Period: 10/1/98–9/30/01

Project Design: This investigation focuses on case studies of elementary and secondary schools which are engaging in the reallocation of resources to better support high-quality teaching and for students, and at the same time, maximize teachers' capacity to grow and learn. The case study schools will be chosen from within the five Core Study sample states and districts, to enable the researchers to fully interpret the impact of higher-level teacher policy environments on within-school resource allocation and work redesign decisions.

This proposed research will focus on how reallocations of resources within restructured schools create more optimal environments for teaching and learning. Specifically, we will examine how resource reallocation affects: more personalized and extended relationships between teachers and students; a more indepth approach to teaching and learning that promotes serious work; and consistent opportunities for teachers to work together to improve their knowledge and skills.

Questions:

- What specific reallocations of staffing, time, and other resources occur in restructured schools?
- How are restructured schools able to make such fundamental changes?
- How do such changes create improvement in teaching and student achievement?
- What are the implications for reallocating resources at the district and school levels?
- What transformations in district- and state-level policy would be needed to promote structural reforms on a widespread basis?

In 10 schools in the 5 Core Study states, the study team will compare traditional and restructured school environments focusing on teacher development. Data will be gathered by observations, interviews, student performance data, budgets, staffing patterns and historical data.

Educational Significance of Study: This study will investigate the effects of restructured school environments on teachers and students, particularly the effectiveness of restructuring resources allocation patterns.

Status of Study and Products: Initial planning phase.

OERI Contact: Ron Anson, 202–219–2214

Title of Study: Effects of Professional Standards on Teaching

Principal Investigator(s): Linda Darling-Hammond, Teachers College/Columbia, NY
and David Cohen, University of Michigan, MI

Program: National Educational Research and Development Centers: The National Center for the Study of Teaching and Policy (CTP)

Funding Level: $577,782. Year 3 $166,150; Year 4 $195,377; Year 5 $196,255

Project Period: 10/1/99–9/30/02

Project Design: Alongside related research undertaken by the National Partnership for Excellence and Accountability in Teaching (NPEAT), this set of studies is intended to examine how the use of professional standards for teaching, in particular, those recently developed by the National Board for Professional Teaching Standards (NBPTS) and the Interstate New Teacher Assessment and Support Consortium (INTASC) serve as useful policy tools by focusing and supporting teachers' learning, and leveraging changes in compensation and teachers' roles. Analyses are contemplated that examine the impact of teaching standards on teacher learning and effectiveness; on the learning opportunities and contexts that shape the effects of these standards; and on the way policy incentives encourage the use of these standards to influence teachers' participation, performance, and professional development.

Questions:

- What do teachers learn and how does their practice and thinking about their practice change as a consequence of participating in these assessments (as assessee or assessors or mentors)?
- How, if at all, is their thinking about themselves as professionals and their careers affected by the chance to attain the status associated with Board-related standards?
- What influence does this teacher learning have on student learning?
- Are there differences in teaching effectiveness (i.e., quality of student learning) for teachers who perform differentially on INTASC and NBPTS performance assessments of teaching?

Because the NBPTS and INTASC efforts are so new, researchers will wait until 1999 to begin studying their effects. Teachers involved with NBPTS and INTASC will be compared across a number of factors addressing effectiveness and their students' outcomes measured by standardized and performance tests. Interviews with teachers engaged in various preservice and induction systems and who teach in different contexts would allow contrasts of the influence of NBPTS/INTASC and other approaches. Finally, data will be collected on the effects of different state policies regarding NBPTS and INTASC on the participation of teachers, decisions about a range of professional development policies, and the effect on retention, renewal, and performance.

Educational Significance of the Study: The NBPTS and INTASC initiatives are two major efforts to reshape teacher professionalism and effectiveness. This research will be a first effort to discover whether these efforts are indeed as promising as hoped. Because the research will be conducted after the initiatives have taken hold, and will be embedded in a rich collection of research on related topics, the results promise to provide early and useful feedback to decisionmakers and practitioners about whether and how to continue using these policy tools.

Status of Study and Products: This project begins in Year 3.

OERI Contact: Barbara Lieb, 202–219–2191

Title of Study: Teacher Learning and Professional Development in the Context of the National Voluntary Exam

Principal Investigator(s): Edward Silver, University of Pittsburgh, PA; and Sheila Valencia, University of Washington, WA

Program: National Educational Research and Development Centers: The National Center for the Study of Teaching and Policy (CTP)

Funding Level: $415,943. Year 3 $133,415; Year 4 $127,445; Year 5 $155,083

Project Period: 10/1/99–9/30/02

Project Design: The development of the national voluntary examinations in reading and mathematics in several years offers an important and unique opportunity to understand how assessment (a central feature of standards-based strategies) do or do not serve as occasions for teacher learning and professional development. We will concentrate efforts on a sample; of states and districts (hopefully within the core sample) which elect to participate in this examination program.

The project will address a broad range of teacher learning opportunities that might be associated with the national tests in reading at grade four and mathematics at grade eight. For example, in addition to evidence that the tests might shape teacher learning in the ways mentioned above, we might also consider the nature and extent of teacher learning that occurs when teachers examine their students' work produced in response to the test questions, or the nature and extent of teacher learning that occurs in professional development activities that are designed to be coordinated with the tests.

The work will trace at several levels, in contrasting state and local settings, the nature of the system's response to these new tests, and the repercussions for teacher learning (and, ultimately, through teachers' understandings, student learning).

Questions:

- To what extent and in what ways do policymakers at the state and local levels conceive of the coming of this new test as an opportunity for improving teaching? What strategies, if any, are devised to realize the potential of this new test as a device for instructional improvement?
- How does the presence of the new tests interact with other state and local assessment systems, or with other features of the policy environment (e.g., new standards created at the state level governing classroom instruction)? How do local and state actors perceive the alignment of the new tests with existing assessments and assessment systems?
- How do teachers, school people, and members of the local communities respond to the new tests? Do they view the test as an occasion for new learning, either on their part or their students? Are there any discernible impacts on or implications for classroom practice? Is the fact of the test's existence, or its results, used by constituencies of any kind to pressure for particular changes or actions by the school system?

- How (if at all) are teachers helped to learn from the form, content, or existence of national voluntary testing?

- In what ways do the dynamics of response to these tests, by individuals or systems, reflect the subject matter and grade-level differences inherent in these tests?

A series of case studies in states that have been supportive and less supportive of the national tests. Specific details of the study design will depend on the nature of the tests and the circumstances under which they are implemented.

Educational Significance of the Study: Because of the wide impact of national tests it will be important for policymakers at all levels to understand the consequences of the tests themselves on teachers and students and the effects of the various environments and supporting policies that will surround the test's implementation. This study will provide early feedback supported by results from other Center studies on teaching and policy.

Status of Study and Products: This study does not begin until Year 3 (and is subject to the actual timing and status of these tests).

OERI Contact: Duc-Le To, 202–219–2248

Title of Study: Policy and Preparation of Teachers for Student Diversity

Principal Investigator(s): Pamela Grossman and James Banks, University of Washington, WA

Program: National Educational Research and Development Centers: The National Center for the Study of Teaching and Policy (CTP)

Funding Level: $305,956. Year 1 $123,781; Year 2 $84,949; Year 3 $58,771; Year 4 $38,455

Project Period: 10/1/97–9/30/01

Project Design: This analytical project will address three issues: (1) how policy can attend to diversity in teacher preparation and how it already does in ways that enhance or constrain teaching; (2) how awareness of diversity interacts with other dimensions of teachers' work and how that affects teacher development policy; and (3) how supporting district, state and university environments can nurture promising teacher development programs that are directed toward teaching to diverse populations. In undertaking a working alliance with another OERI National Research Center, the Center for Research on Education, Diversity, and Excellence (CREDE) will sponsor a series of working sessions, joint analyses, and associated writing that pools the thinking and data of the two Centers bearing on this facet of the teacher policy problem.

Because this will be an emergent, collaborative alliance, rather than a fixed study design, the research strategy will evolve in interaction between the partners over time. The two centers will alternate in preparing a discussion paper for the other, drawing on its frameworks and findings and posing central questions and offering tentative resolutions based in the knowledge base which the Centers collectively possess. The first paper will be an overview of the way the multicultural education field construes policy action and policy issues bearing on teacher development, with responses to offer different policy vantage points on the same set of issues. The paper and response commentary will be the basis for a dialogue and working session on these framing issues. Both Centers will alternate developing papers on topics associated with diversity and sharing them in a joint conference.

Over time, these papers will establish a framework around which each Center will be able to bring empirical work to bear on each other's concerns—for example, CTP could present a review of the teacher policy environment in which CREDE programs sit, and collaboratively trace the connections between practices and policy.

Extensions of the relationship involving a limited amount of empirical work on CTP's part will be discussed with CREDE colleagues: (a) doing a special analysis of a sample state regarding the specific ways that teacher-related policies attend to issues of student diversity (e.g., how the state described what it expects teachers to know and be able to do, and how it may embed these in standards for teacher preparation); and (b) backwards mapping exercises, starting with CREDE developmental sites, and tracing to particular features of the legislative, professional, and bureaucratic policy environments that exert important influences over the developmental work and its future prospects.

Methodology will depend on the final arrangements made between the two Centers regarding mutually productive studies and related activities.

Educational Significance of the Study: Because of the importance of diversity in the education arena, the opportunity to reinforce the efforts of a Center focused on diversity with the efforts of a Center focused on teaching and policy, promises to provide a richer range of information to policymakers and practitioners regarding both Centers' concerns.

Status of Study and Products: Initial planning phase, culminating in a working conference featuring members of CREDE, CTP, and Northwest teacher educators in July 1998.

OERI Contact: Betty Demarest, 202–219–2217

Title of Study: Transitions into Teaching: Effective Policies and Practices for Beginning Teachers

Principal Investigator(s): Pamela Grossman and Sheila Valencia, University of Washington, WA

Program: National Educational Research and Development Centers: The National Center for the Study of Teaching and Policy (CTP)

Funding Level: $112,531. Year 1 $33,320; Year 2 $58,998

Project Period: 10/1/97–9/30/02

Project Design: This intensive case study (located in one of the Core Study sample states) explores the way policies and environmental conditions shape the entry of beginning teachers into school workplaces, and how their classroom-based practices in a particular subject area (language arts) are affected.

This study builds on and complements work we are now doing and will continue to do for the next 2 years, as part of the National Research Center on Student Learning and Achievement in English, which examines how teachers make the transition from teacher education to full-time teaching. In that work, we examine how teachers appropriate and implement conceptual and pedagogical tools from their teacher education programs into their first 2 years of teaching. This policy study will analyze the policies—both explicit and implicit—in the teacher education program and at the site of teachers' first 2 years of teaching to determine how those policies influence teachers' thinking and practice in language arts.

Questions:

- How do stated and implied policies and practices in the teacher education program contribute to teachers' conceptual and pedagogical understanding of their subject matter and teaching in general?
- How do the stated and implied policies and practices (e.g., mentoring, professional development, class assignment, school culture) of various schools and school districts facilitate or hinder teachers' transition from preservice to professional teaching?
- How do different school contexts influence teachers' reconceptualization of concepts and pedagogy acquired during their teacher education program?
- What beliefs about teaching and learning are reflected in schools' and school districts' policies and practices directed at beginning teaching?

Five elementary and five secondary language arts teachers will be closely followed through their last year of preparation and their first 2 years of teaching. Additionally, interviews of colleagues, administrators, department chairs, and others will be conducted. The focus of the work will be on policies and cultures that shape teachers' understanding of their work.

Educational Significance of the Study: This study will provide a ground-level view of the life of teachers moving into teaching, with particular attention to the way external influences affect their teaching lives. This should give policymakers and others a "reality check" on the impact of policies and informal decisions on teaching practice.

Status of Study and Products: First year of data collection is now under way.

OERI Contact: Barbara Lieb, 202–219–2191

Title of Study: Contexts and Policies Influencing Teacher Recruitment, Commitment, and Retention

Principal Investigator(s): Richard Ingersoll, University of Georgia, GA; and
Linda Darling-Hammond, Teachers College/Columbia University, NY

Program: National Educational Research and Development Centers: The National Center for the Study of Teaching and Policy (CTP)

Funding Level: $159,868. Year 1 $50,547; Year 2 $77,462

Project Period: 10/1/97–9/30/02

Project Design: Using the most recent Schools and Staffing Survey (SASS) database, this study will produce a national descriptive study of the qualifications and characteristics of the teaching force and teaching conditions across different kinds of communities, an analysis of who is entering and leaving teaching, and a multivariate analysis of how school, district, and state policies and conditions influence the quality of personnel recruited and their retention in the profession.

Questions:

- What are trends in the characteristics, qualifications, and type of preparation of veteran and newly hired teachers nationally, by state, and by type of district (by urbanicity, student SES, and per pupil expenditures)? Are teachers becoming better prepared? Are well-qualified teachers available to all types of students? Are high-need teachers (teachers of color and those in high-demand fields) being recruited in sufficient numbers? Do trends vary by state and/or type of district and school? Can these trends be linked to state and district policy variables, such as preparation requirements, salary levels, and recruitment incentives?
- How are teaching conditions and teacher qualifications distributed across schools, students, and courses? How are more and less-qualified teachers distributed by field, level, sector, and locale?
- What factors—including teacher characteristics and workplace variables—influence teachers' commitment, sense of efficacy, and plans to remain in the profession?
- Who is leaving teaching and why?
- Are there discernible influences of such policies as beginning teacher induction programs, incentive pay schemes, school restructuring practices, or availability of professional development on teachers' qualifications, views of teaching, or retention patterns?

Analysis of data from 1990–91 and 1993–94 SASS teacher surveys and the 1994–95 longitudinal follow up survey of teacher attrition, with linked data from school and district surveys that supply information about policy variables. These analyses will include basic frequencies and cross-tabulations of teaching force and teacher workplace characteristics and tends, along with multivariate analyses of the factors influencing teachers' views of teaching, planned commitment, and actual attrition from teaching.

Educational Significance of the Study: This work will aid in sample selection and hypotheses generation for other work being conducted by CTP. In addition, the patterns revealed by the analyses will give policymakers and educators a clearer picture of large scale effects of current policies on teaching.

Status of Study and Products: Initial planning phase and first round of analysis.

OERI Contact: Barbara Lieb, 202–219–2191

Field-Initiated Studies (FIS)

Title of Study: A National Study of the Effects of School Choice on Student Achievement and Opportunity

Principal Investigator(s): Douglas Archbald, David Kaplan, and Yasser Nakib, University of Delaware, DE

Program: Field-Initiated Studies (FIS)

Funding Level: $305,336. Year 1 $127,322; Year 2 $137,516; Year 3 $155,088

Project Period: 9/1/96–8/31/99

Project Design: The purpose of this study is to investigate, on a nationwide level, the effects of school choice policies on student achievement and opportunity.

The study addresses the following research questions:

- Do students in districts with school choice policies differ on achievement compared with students in districts without school choice policies, adjusting for differential resource allocation, student background and demographic conditions?
- If student achievement is higher under conditions of district school choice policy, to what extent is higher achievement explained by measurable school climate or organizational characteristics consistent with the accountability and empowerment theses of school choice proponents?
- Is the opportunity for students to choose schools distributed unequally in districts with school choice policies, compared with districts without school choice policies?
- If student opportunity is less equal in districts with school choice policy, to what extent is this accounted for by measurable differences in transportation, parent information, or district resource allocation policies?

A sample consisting of 350 urban school districts (including 155 of the nation's largest) is the target of the study. Student achievement will be measured using two national assessments—the National Assessment of Educational Progress (NAEP); and the National Longitudinal Education Study (NELS:88). The study employs advanced statistical modeling and introduces new techniques for the study of educational opportunity.

Educational Significance of the Study: To improve our understanding of policies and outcomes of school choice in urban settings and at the same time contribute to the burgeoning policy analysis field by introducing and testing a number of methodological advances.

Status of Study and Products: Progress Report (end of year 1); Interim Report with description of findings (end of year 2); and Final Report, several policy briefs, a symposium and journal articles (end of year 3).

During the first year, the principal investigators have acquired all necessary data for the analysis, including those restricted NCES data: NAEP, SASS, and NELS:88. They also have created a huge district demographic database which contains 1,200 items of information in each of the 586 school districts. They are now starting analyses of the data.

OERI Contact: Duc-Le To, 202-219-2248

Title of Study: State Mandated Accountability for Educational Reform: A Study of the Illinois Quality Review Process for School Accreditation

Principal Investigator(s): Paul J. Baker, Illinois State University, IL

Program: Field-Initiated Studies (FIS)

Funding Level: $284,127. Year 1 $85,471; Year 2 $85,245; Year 3 $113,411

Project Period: 9/1/96–8/31/99

Project Design: This research project proposes to conduct a 3-year study of local school responses to a major reform initiative by the Illinois State Board of Education. The study examines the nature and meaning of education improvement for four key decisionmakers—state officials, district superintendents, school principals, and classroom teachers.

Questions:

- What are the conditions under which a state education agency can articulate and coordinate a reform initiative?
- In response to state mandates for school improvement, Why do some local educators respond positively? Why negatively?

Continuing with research begun in 1992, data has been and is being obtained through interviews (with policymakers and state officials). A review of legislation and other documents is a part of the research as will be "Quality Review" audits at five local schools. Two monographs will represent the outcome.

Educational Significance of the Study: The results will enable state and other policymakers to craft more effective strategies for change.

Status of Study and Products: Annual progress reports (end of years 2 and 3); two monographs on state-mandated reform of local schools (end of year 3). During the first year, the principal investigators have identified the schools for the 1997 survey, revised the survey documents, and mailed out the surveys. They also have completed several draft manuscript and made two national presentations. One of the manuscripts will be submitted to a national journal in April 1988.

OERI Contact: Norma Fleischman, 202–208–3749

Title of Study: Competing Strategies for Educational Reform: Charter Schools and Professional Development Schools

Principal Investigator(s): David Plank and Gary Sykes, Michigan State University, MI

Program: Field-Initiated Studies (FIS)

Funding Level: $361,417. Year 1 $122,260; Year 2 $125,216; Year 3 $113,941

Project Period: 9/1/96–8/31/99

Project Design: This research project is a comparative, multiple-site case study of a small sample of charter schools and professional development schools in Michigan as instances of two competing reform strategies—to professionalize schools and to introduce consumer choice.

Questions:

- Which of two prominent and competing approaches to school reform in Michigan is most viable? Professional Development Schools (partnerships between K–12 public schools and universities)? Or Charter Schools (with its emphasis on parental involvement)?

The principal investigators are conducting eight comparative case studies of Charter Schools and Professional Development Schools.

Educational Significance of the Study: The results will inform policy by articulating the educational, social, and political implications of each theory, how it's been implemented, and what effect it's had on student achievement.

Status of Study and Products:

Phase I—a review of the literature and analysis of the use of both types of schools;

Phase II—development of a topology of schools for reform in Michigan; and

Phase III—comprehensive field studies (including document analysis, interviews, and site observations in and outside of classrooms); also examination of test-score data and other indicators of school performance.

During the first year, the principal investigators have obtained agreement to participate in the study of eight sites. They have developed instrument protocols for the first wave of data collection. They also have reviewed a range of software programs for qualitative data analysis. They have held the first Advisory Board meeting and have completed the first round interviews.

OERI Contact: Barbara Lieb, 202–219–2191

Title of Study: Specialization and Reform of Mathematics Instruction in Elementary Schools

Principal Investigator(s): Jane Hannaway, The Urban Institute/Education Policy Research Program, Washington, DC

Program: Field-Initiated Studies (FIS)

Funding Level: $137,447

Project Period: 9/1/96–8/31/98

Project Design: This project investigates the extent to which specialization teachers' work may facilitate the translator of innovative instructional reforms in mathematics into classroom practice in elementary schools.

Questions:

- Compared with generalist classroom elementary school teachers, are those who specialize in teaching math more likely to hold beliefs compatible with reform initiatives in math instruction? Be knowledgeable about new instructional approaches? Exhibit this knowledge in their instructional practices? Spend more time teaching math? And do they engage in their work more professionally?

The principal investigators are collecting survey data from approximately 200 teachers in Montgomery County (Maryland), Fairfax County (Virginia), and the District of Columbia school districts. Interviews are also being conducted with approximately 50 of these teachers and their principals.

Educational Significance of the Study: The findings—which will indicate whether specialization results in more effective teaching practices and also whether or not it produces higher student achievement—could influence the organization of elementary mathematics teaching.

Status of Study and Products: Products include instruments, preliminary reports, and final reports (at end of project). This study is being conducted at a no-cost extension to August 31, 1998. The principal investigator requested the no-cost extension because the research did not have enough time to complete the telephone interview and conduct the field work due to the unexpected workload in school year 1997. The study was resumed in school year 1998.

OERI Contact: Duc-Le To, 202–219–2248

Title of Study: Leading for Diversity: A Study of How School Leaders Achieve Racial and Ethnic Harmony

Principal Investigator(s): Rosemary Henze, ARC Associates, Inc.

Program: Field-Initiated Studies (FIS)

Funding Level: $572,454. Year 1 $172,710; Year 2 $203,768; Year 3 $195,976

Project Period: 9/1/96–8/31/99

Project Design: This study examines the characteristics and processes of exemplary leadership in fostering unity rather than divisiveness on school campuses. The study employs a qualitative, case study approach to describe how school leaders create and maintain this unity as members of the school community engage in school reform.

Question:

- What are the characteristics and behavior of school leaders who foster unity rather than divisiveness among racially and ethnically diverse student populations?

The project is employing a qualitative, case study approach to study exemplary leadership in elementary, middle, and high schools. At the outset, six sites in the San Francisco Bay area will be studied.

Educational Significance of the Study: The results should prove useful to all school principals, especially those who face problems associated with differences of race and ethnicity.

Status of Study and Products: Products include: study reports summarizing descriptive data and providing preliminary analyses (years 1, 2, and 3).

OERI Contact: Mark Travaglini, 202–219–1808

Title of Study: *Professional Development* to *Build* Organizational Capacity in Low-Achieving Schools

Principal Investigator(s): Fred Newmann, University of Wisconsin, WI

Program: Field-Initiated Studies (FIS)

Funding Level: $645,243. Year 1 $212,623; Year 2 $207,447; Year 3 $225,173

Project Period: 9/1/96–8/31/99

Project Design: This is a study of the promise and difficulties in using professional development to build organizational capacity in low-achieving schools that serve low-income students. Based on research in eight sites, the study will describe how programs can be managed to integrate different aspects of professional development, to craft an appropriate role for external agencies, and to secure minimal resources required for success.

Question:

- In low-achieving schools that serve a largely low-income student population, what difficulties are there to using professional development in building organizational capacity?

A national survey is being employed in identifying eight, low-achieving schools that are participating in promising and sustained professional development activity. (The sample is limited to schools with sizable proportions of low-income students.) The nominees must also be schools that operate within a school-based management system and that have participated in a professional development project for at least 3 years.

Educational Significance of the Study: The results can be expected to assist policymakers to generate more effective professional development strategies tailored to the needs of schools that fit this mold.

Status of Study and Products:

Phase I—soliciting nominations, reviewing written material, and conducting phone interviews with representatives of the schools nominated;

Phase II—conducting basic onsite studies of the eight schools;

Phase III—follow-up the onsite research of four of the schools that seem to offer the most promise for building organizational capacity; and

Phase IV—analyzing and reporting findings.

During the first year, the principal investigators have met with their Advisory Group and selected the schools for case studies. They have completed basic data collection at three sites and started to analyze both interviews and survey data, including preparation of short reports for each school.

OERI Contact: Ron Anson, 202–219–2214

Title of Study: The Effect of School Reconstitution on School Improvement

Principal Investigator(s): James G. Cibulka, University of Maryland, College Park, MD

Program: Field-Initiated Studies (FIS)

Funding Level: $642,860. Year 1 $216,914; Year 2 $215,189; Year 3 $210,757

Project Period: 10/1/97–9/30/00

Project Design: This study will examine schools "on probation," an early stage of reconstitution, in three states: Maryland, California, and Kentucky. To be addressed are such questions as:

- Does the probationary stage of reconstitution lead, over time, to improvement in identified schools?
- What school context conditions result in improvement, decline, or stagnation of student performance?

The study will select four school sites in each of the three states cited above. Case studies of schools "on probation" for reconstitution will be conducted.

Educational Significance of the Study: These case studies will enhance our understanding of whether and how reconstitution policies support or hinder positive change in schools. Although policymakers increasingly resort to reconstitution as a strategy to fix failing schools, there is a vacuum of research knowledge about its actual effects.

Status of Study and Products:

Phase I—content analysis of school improvement plans submitted by schools on probation and interviews with state Contacts. Products: meetings with policymakers and practitioners in the three states studied and a journal article.

Phase II—field work in four schools in each state (two that have been on probation status for at least 1 year and two that have been newly identified).

Phase III—comparative analysis of survey, observation, and case study data. Products: Meetings in the three jurisdictions, technical report, journal article.

OERI Contact: Elizabeth Demarest, 202–219–2217

Title of Study: Integrated Governance as a Strategy to Improve Low-Performing High Schools

Principal Investigator(s): Kenneth Wong, University of Chicago, IL

Program: Field-Initiated Studies (FIS)

Funding Level: $498,763. Year 1 $147,288; Year 2 $175,035; Year 3 $176,440

Project Period: 10/1/97–9/30/00

Project Design: This study is considering whether the use of state legislative authority to intervene in failing schools can create the conditions for improving teaching and learning. "Integrated governance" has three features: (1) state legislation focused on student outcomes as the measure of school performance; (2) state legislation which grants states and districts authority to intervene in failing schools; and (3) state and district willingness to use this authority to improve schools.

Multilevel case studies in two urban school districts.

Educational Significance of the Study: This research will begin to fill an important gap in knowledge about the implementation process and the effects of reconstitution. It will help urban districts to develop effective strategies to address the problem of low-performing schools.

Status of Study and Products: Two major reports will be produced: a mid-term report at the end of the second year; and a final report at the end of the third year.

Annual Performance report is due 9/98.

OERI Contact: Elizabeth Demarest, 202–219–2217

Title of Study: Productivity of Teacher Preparation Programs: Surplus or Shortage in the Quantity and Quality of Degree Graduates

Principal Investigator(s): Erling E. Boe, University of Pennsylvania/Graduate School of Education, PA

Program: Field-Initiated Studies (FIS)

Funding Level: $190,334

Project Period: 1/1/98–6/30/99

Project Design: The purpose of this research project is to study the productivity of teacher preparation programs, including the quantity and quality of graduates who enter teaching.

Questions:

- Are the resources devoted to teacher preparation nationwide sufficient to produce an adequate number of novice teaches needed to meet the projected demand for replacement teachers and the rapidly growing student enrollment?
- Are resources devoted to teacher preparation nationwide more productive at the bachelor's or master's levels?
- Are resources targeted to produce sufficient numbers of teachers in teaching fields where needed? Of those who graduate with degrees in teacher preparation, does the percentage who become employed as teachers vary with their demographic characteristics such as ethnicity or gender?

The research is being based on data collected by two sets of national surveys: the Integrated Postsecondary Education Data System (IPEDS); and the Schools and Staffing Survey (SASS).

Educational Significance of the Study: The study's findings will help identify shortages of teachers in certain subject areas and needs for training new teachers with specific skills and subject areas. The results of the study will also be useful to policymakers and teacher training institutions in improving preparation practices and public policies supporting these programs.

Status of Study and Products: Products include: (1) a policy research report or reports and (2) articles suitable for submission for publication in an appropriate, refereed journal (due by end of project period). The study just started and the Annual Performance report is due 12/98.

OERI Contact: Duc-Le To, 202–219–2248

Title of Study: The Educational and Economic Consequences of Changing High School Graduation Standards

Principal Investigator(s): Thomas S. Dee, Georgia Tech University, GA

Program: Field-Initiated Studies (FIS)

Funding Level: $187,258. Year 1 $62,802; Year 2 $60,711; Year 3 $63,745

Project Period: 1/1/98–12/31/00

Project Design: The overall goals of this project are to document each state's experiences with new graduation standards and to evaluate the effects of these standards on the key academic and economic experiences of high school students. More specifically, this project will focus on how state graduation standards have influenced three outcomes that have important welfare implications.

There are three questions. The first question concerns the direct effects of graduation standards on the number and distribution of courses taken by high school students. The second question pertains to how graduation standards have influenced the decisions of high school students regarding high school completion and college entrance. The third question concerns how graduation standards influenced the labor market experiences of students who chose to discontinue their schooling by leaving high school and not entering college.

The evaluations will be based on several large, nationally representative data sets—pooled data from High School and Beyond (HS&B) and NELS:88—which will permit the researchers to identify the effects of state graduation standards within groups of public school students (race, ethnicity and gender).

Educational Significance of the Study: This detailed analysis will provide policymakers with new evidence about whether variations in the stringency of requirements across states makes a difference; and whether the effects they have on students differ by sex, racial and ethnic categories, or socioeconomic status.

Status of Study and Products: Progress reports (years 1,2, and 3); final report (end of year 3). The principal investigator just received the restricted NCES data for the study in March 1998. Annual performance is due 12/98.

OERI Contact: Duc-Le To, 202–219–2248

Title of Study: Project ACHIEVE: Achieving High Standards and Equity for Diverse Populations

Principal Investigator(s): Donald P. Oswald, Virginia Commonwealth University, VA

Program: Field-Initiated Studies (FIS)

Funding Level: $439,117. Year 1 $155,676; Year 2 $159,139; Year 3 $124,302

Project Period: 10/1/97–9/30/00

Project Design: The purpose of this project is to understand and communicate the implications of the disproportionate representation of ethnic minorities in special education programs in this country.

Questions:

- To what extent do U.S. school districts display patterns of disproportionate representation in the identification of minority students in each of the five disability categories (e.g., mild mental retardation, moderate mental retardation, severe mental retardation, serious emotional disturbance, and specific disability)?
- How to identify effective state and district policy and management approaches to contact and deal with problems related to disproportionate representation?

The data for this study are being drawn from the Fall 1992 and Fall 1994 Elementary and Secondary School Civil Rights Compliance Report Surveys. These data will be merged with other NCES data for statistical analysis. ANOVA will be conducted to test the correlation. The placement ratio work with demographic variables.

Educational Significance of the Study: This study will provide policymakers at the state and national levels with policy analyses that will enable them to interpret the data they are required to produce and to make better use of it to address the problem.

Status of Study and Products: Technical report on disproportionate representation in identification (year 1); technical reports on patterns of placement and gender effects (year 2); technical report on predicting disproportionate representation (year 3); and final reports and policy briefs (end of year 3).

Annual performance report is due 9/98.

OERI Contact: Norma Fleischman, 202–208–3749

Title of Study: Determination of District Processes Enabling Change and Long-Term Impact of Teacher-Led Staff Development on School Climate, District Policy and Governance, and Student Achievement

Principal Investigator(s): Ruie Jane Pritchard, North Carolina State University, NC

Program: Field-Initiated Studies (FIS)

Funding Level: $525,420 Year 1 $164,825; Year 2 $188,843; Year 3 $171,752

Project Period: 10/1/97–9/30/00

Project Design: This study investigates the role of teachers on district conditions on changes in school climate, district policy and governance, and student achievement. A parent site of the National Writing Project (NWP) will be viewed two ways—by long-term impact of teacher-led staff development on the three target areas; and by impact of the three target areas on implementing and sustaining educational changes in the school districts.

Questions:

- What is the role of teachers on changes in school climate? On district policy and governance? On student achievement? And what part do district conditions play in these changes?

Both quantitative and quality research methods are used for this study. The study will conduct an analysis of previously gathered outcome-oriented data on student achievement and classroom practices. It will also select 12 experimental districts, which have successfully integrated the NWP into their curriculum and compare them with 12 control districts.

The researchers will examine data linked to the NWP. They'll be looking at how and why the NWP has sustained itself for over 15 years in one district and to what extent teacher consultants from here have affected change in other districts.

Educational Significance of the Study: This study will help policymakers understand the long-term impact of teachers and teacher-led staff development on policy, governance, and student achievement.

Status of Study and Products: Progress reports (years 1, 2, and 3); and final report, two journal articles and a monograph (year 3). Annual performance report is due 9/98.

OERI Contact: Barbara Lieb, 202–219–2191

Small Business Innovation Research (SBIR)

Title of Study: Using Information System Technology to Support Educational Excellence, Equity and Accountability

Principal Investigator(s): Mary Ann Lachat, President, Center for Resource Management, (CRM) Inc., NH

Program: Small Business Innovation Research (SBIR)

Funding Level: $49,229.

Project Period: 9/30/97–3/29/98

Project Design: This is a Small Business Innovation Research (SBIR) project. The project is at Phase I. The funding for Phases II and III depends on the performance and potentials of the project. Phase I of the project will determine the technical feasibility of developing state-of-the art information system technology for districts and schools that addresses the accountability, planning, management, and evaluation functions essential to achieving comprehensive education reform and increased productivity in education.

The project will produce a user-friendly, but highly sophisticated full featured-relational database software product that provides: unparalleled capability to create an integrated database, linking student performance data, demographic data, and data on school programs and practices; and unlimited capacity to desegregate data. These capacities will allow school systems to:

- demonstrate student and school performance against high learning standards;
- identify factors that account for variations in student performance; and
- address equity factors in determining the extent to which programs and practices correlate with success for different types of students.

To accomplish the objectives of this research and development (R&D) effort, a major thrust of the Phase I effort will be to build on the extensive RandD already conducted by Center for Resource Management, Inc. (CRM), and determine the feasibility of creating a highly enhanced windows version of the SOCRATES software product for use at both school and district levels, and research and evaluation for federal, state, and foundation grant programs. The project team will work with a advisory group of system experts and end-users to:

- identify potential uses, key questions, and methodological issues to be addressed in an enhanced system,
- develop a list of new variables to be included in the system, and
- define the overall structure and preliminary technical specifications for the enhanced system product.

The project team will develop the enhanced system using Borland's Delphi as the front end, which with Microsoft Active X technology, can be programmed to talk with other applications such as file compression utilities. Using Active X, the system can provide schools with a way to compress their data files and automatically send them to a district office for analysis. During Phase I, the team also will explore appropriate back end application for the system such as Microsoft SQL Server or Borland's Interbase SQL Server.

Educational Significance of the Study: This R&D effort aims to overcome the serious lack of information system capability in districts and schools across the nation, and involves the application of the latest relational database technology to the information requirements implicit in the nation-wide mandate for higher learning standards for all students and new demands for accountability at district and school levels. There is extensive commercial potential for the products that will be produced through this R&D effort. The potential customer base includes not only schools and districts across the nation, but the product can serve research and evaluation purposes of interest to federal and foundation program grantees, state agencies, universities, and research organizations.

Status of Study and Products: Phase I products include:

- Detailed feasibility report summarizing the functional components of the system and development issues (3/98).
- Detailed analysis of the technical feasibility of developing the system for commercialization (3/98).
- A marketability analysis (3/98).

Note: Phase II (continent to the approval of continuation funding) will result in a full-featured relational data base software program that will provide powerful information system capabilities to districts and schools, a User's Manual, and training materials.

OERI Contact: Duc-Le To, 202-219-2248

Directed Research

Title of Study: National Study of Education Finance Equity, Adequacy and Productivity

Principal Investigator(s): Janet Hansen, Study Director, Committee on Education Finance, Equity, Adequacy, and Productivity, Commission on Behavioral and Social, Sciences and Education, National Research Council/National Academy of Sciences, Washington, DC

Program: Directed Research

Funding Level: $3,200,000. Year 1 $1,147,500; Year 2 $986,500; Year 3 $966,800; Year 4 $99,200

Project Period: 9/30/95–3/31/99

Project Design: This is a Congressionally mandated study. The fundamental purpose of this study is to substantially advance the theory and practice of education finance in the United States. The work is intended to focus on the following key question:

- How can education finance systems be designed and implemented to provide the capacity and incentives to assure that all students achieve high levels of learning, and assure that education funds are used in the most productive manner possible?

To achieve these ends, the National Academy of Sciences is conducting a comprehensive study of the complex legal, economic, structural, and pedagogical issues that surround the relationship between that field of education finance and student achievement.

The study will undertake the following tasks:

1. A review of existing state and local finance structures and operation;

2. A review and analysis of the legal and constitutional context of school finance equity, adequacy, and productivity;

3. An exploration of various conceptions of equity in education finance;

4. An exploration of the concept of educational adequacy;

5. An exploration of productivity in education;

6. Examination of incentive structures: how they currently operate in illustrative cases and how they might be crafted to positively affect the support for and conduct of public education;

7. The discussion of illustrative indicators of student, school and system performance and other desired outcomes;

8. A review of the existing data sources to provide policymakers and researchers on where money comes from, where it goes, and how it is spent; and

9. The development of model school finance systems with a set of policy options for federal, state, and local legislators, education officials, judges, lawyers, and others to consider.

A Committee has been established to advise and direct the staff to carry out a series of research activities that address these issues and to prepare for the final reports. The activities include research papers and reports by staff and Committee members, commissioned papers and panel discussions on critical topics. Findings of these research activities will be used for the final report. Depending on the findings of the Academy's work, there will be recommendations for either new research directions or new ways of financing American education in the final report.

Educational Significance of the Study: State school finance plans are continuously being challenged. Since the landmark Serrano case in the early 1970s, school finance in more than 40 states have been subjected to litigation. Mandated by the U.S. Congress and directed by a prestigious panel of experts, this comprehensive study will collect, synthesize, and analyze extensive data and information on finance equity, adequacy, and productivity. It is expected that results and recommendations of the final report will provide guidelines and ideas for legislators and policymakers to make fundamental changes in school finance legislation and policies that will improve the equity and efficiency of education systems and consequently improve the learning by all students.

Status of Study and Products:

- Detailed study plan with schedules and a list of deliverables (7/96).
- Progress reports and deliverables specified in study plan (during the funding period).
- Final report, executive summary, and other associated materials (3/99).

OERI Contact: Duc-Le To, 202–219–2248

Title of Study: High Performance Learning Communities—Community School District 2, New York City

Principal Investigator(s): Lauren Resnick, Richard Elmore, and Anthony Alvarado, University of Pittsburgh, PA; Harvard University, MA; Community School District 2, New York City, NY

Program: Directed Research

Funding Level: $6,177,464. Year 1 $1,825,150; Year 2 $1,228,359; Year 3 $1,249,936; Year 4 $1,249,543; Year 5 $624,474 (Jointly funded by four of the National Research Institutes)

Project Period: 9/30/96–9/30/01

Project Design: This project brings together three diverse perspectives on education reform: that of a district superintendent; that of a scholar of education policy, institutional organization, and change; and that of a cognitive scientist. Each brings to the collaboration a team of colleagues who will test, through collaborative design and systematic contacting of results, a theory-based set of principles and tools for creating and sustaining high-performance learning environments.

This project builds on the work of Anthony Alvarado, Superintendent of Community School District 2 in New York City. Alvarado has brought to his superintendency a distinct theory of school improvement that places at the heart of a system-wide administrative strategy calling for continuous upgrading of teaching practice and learning results. Alvarado focuses on improving instruction. His strategy is to make every principal and every teacher responsible for instructional improvement. The goal is continuous improvement in every school, eventually reaching every classroom.

This project is a multilevel, multiyear, multistage process of extending District 2's current professional development and instructional improvement strategy from a primary focus on content-driven improvement to a broader standards-based effort organized around a coherent theory of learning; explicit performance standards; and new assessments of student learning calibrated to the standards.

Questions:

- How can a commitment to an agreed upon and widely accepted vision of high achievement for all students and high performance for educators be created and sustained among the members of the learning community—educators, parents, students, and the surrounding community?
- How can all core education activities be oriented to a vision of high achievement for all students?
- How can a learning community identify and implement appropriate instructional strategies to assure that all students achieve to high levels?

- How can the school organization and community resources be expeditiously used, modified or built anew to support high performance learning communities?

- How can the policy environment and governance arrangements be expeditiously used, modified or built anew to support high performance learning communities?

- How can key members of the learning community work together to identify and define the roles each will play in a restructured school, identify needed knowledge and skills to effectively and efficiently carry out their roles and design and implement a plan to gain, maintain and best use that knowledge and those skills?

- How can a high performance learning community be sustained in the face of change (e.g., personnel, leadership, resources, rewards, incentives, accountability practices, and demography)?

- How can a commitment to self-assessment and continuous improvement be created and sustained?

- How can learning communities document and assess their progress in reaching a vision of high achievement for all students?

This project combines systematic research at the classroom, school, and system levels, with attention to interaction across levels; it contacts the progress and emerging problems of the new strategy; and it feeds back systematic research to serve as the basis for improving the strategy. This combination of research and improvement requires a unique set of skills and expertise. It requires knowledge of systemic change at both theoretical and practical levels. It requires daily involvement at the classroom, school, and district level with knowledge about teaching and administrative practice. And it requires continuous discussion among researchers and practitioners on their observations and interpretations of what is happening with the system.

District learning community. The New Standards Projects' Performance Standards and Assessments as well as the Institute for Learning Instruction and Learning Profile are tools that will be introduced to principals, district staff and professional developers who are currently using strategies to further the goals of improved instruction (the focus of improvement in the District for the past eight years). These strategies revolve around monthly meetings, conferences, budget and priority-setting procedures, summer seminars, and support networks. Interviews with district staff, professional development consultants, and a sample of principals and teachers will determine how they deal with the introduction of a standards-based intervention and how this affects problems of resources, responsibility, and variability. A continuous feedback of results will be introduced at a bi-monthly Program Development and Research Seminar. Issues and analyses will be adapted for us in practice. A series of annual reports will provide an overview of the success of the introduction of standards, with a broader analysis of the practical and theoretical issues of system-wide instructional improvement provided as the story unfolds.

School-level learning community. A similar strategy will be used at the school level with intensive focus on three different schools each year of the project. Teachers, principals, and staff developers will be interviewed to determine how the New Standards affect the school culture and the effectiveness of teachers. Observations of meetings, professional development activities, and supervisory events will be added to provide a picture of change, or lack of it, in the school using the New Standards theories and tools. The Instruction and Learning Profile tools will also be used in all schools across the district to provide a baseline of information about district progress.

Classroom-level learning community. The primary methodology to study classrooms will be teacher and student interviews and classroom observations. They will be extensively analyzed to gather information about teachers' attitudes, their sense of professional efficacy as teachers, and their beliefs about student ability. A sample of students will be interviewed to determine the effect of teachers' efforts as seen by students. Four teachers in each of three schools will be closely studied and all classrooms in the three case study schools will be Contacted each year to determine the degree of penetration of the broad district strategy to introduce standards into the classroom.

Student achievement. The New Standards Reference Examination in mathematics and English language arts will be administered to grades 4, 8, and 10 each spring. In addition, portfolios, videotapes, work presented by students, and judgments of coaches and supervisors will measure the effect of the New Standards approach on student achievement.

Educational Significance of the Study: By bringing together educators with varied backgrounds and specialities, this project will

- establish in one urban school district an institutional structure and professional standards that result in substantially improved learning by all the children in all the district's schools;
- develop tools to support continuous professional development at all levels of the system;
- carefully document and analyze the work and its effects on student achievement; and
- begin a systematic process of helping other districts use the principles and tools developed in the course of the project.

Status of Study and Products: In its initial period, the study has produced a videotape introducing the principles underlying reform in District 2 and showing examples of teaching styles and school culture in place in the district. Additionally, a series of teacher and administrator seminars were held to acquaint school-level leaders with the new reform principles. A research-based monograph was prepared looking at district level leadership and the ways it enabled or constrained reform across the district. First-year reports of the district, school, and classroom learning community strands are also available as well as results of the first year's New Standards exams. The results showed impressive achievement by students in the English language arts portion of the exam, much higher that predicted for the schools tested.

OERI Contact: Ron Anson, 202–219–2214

Introduction

The National Institute on Postsecondary Education, Libraries, and Lifelong Learning is part of the U.S. Department of Education's Office of Educational Research and Improvement. The Institute was created by the Education Research, Development, Dissemination, and Improvement Act of 1994. The vision of the Institute is that all postsecondary students and learners will be provided opportunities for affordable, high-quality education tailored to their individual, family/community, and occupational needs. The mission of the Institute is to carry out a program of research and development in adult learning to provide nonpartisan, research-based leadership to the United States as it seeks to improve libraries, postsecondary education, literacy, and lifelong learning throughout the country.

The Institute sponsors a comprehensive program of research, development and dissemination designed to improve the following:

- successful participation and degree completion by students in postsecondary education;
- affordability, quality and learner outcomes of postsecondary education;
- adult learning and literacy;
- connections between education and work; and
- library services.

National Center for Postsecondary Improvement (NCPI)

Title of Project: National Center for Postsecondary Improvement (NCPI)—Center Overview

Principal Investigator(s): Dr. Patricia J. Gumport, Stanford University, Palo Alto, CA
in collaboration with University of Michigan, Ann Arbor, MI
and University of Pennsylvania, Philadelphia, PA

Program: National Educational Research and Development Centers

Funding Level: $12,500,000. Year 1 $2.5M; Year 2 $2.5M; Year 3 $2.5M; Year 4 $2.5M; Year 5 $2.5M

Project Period: 4/1/96–3/31/01

Center Mission and Focus: This center integrates a set of projects around the theme of improving teaching and learning and accountability in postsecondary education. Several projects relate directly to improving teaching and learning, improving faculty development and instructional quality, and ensuring that postsecondary education meets the needs of students, the economy, and society. Other projects focus on improving teaching and learning through improving the organization, governance, and financial efficiency of postsecondary institutions.

Accountability refers to the growing imperative that postsecondary institutions must be responsive to the demands of students, the public, and employers for various results (such as access, quality of services, and cost containment). A number of center projects focus on helping postsecondary institutions meet these critical challenges.

NCPI's research is organized into six interconnected areas of study, to answer the following questions:

1. *How does a student's educational experience affect his or her academic achievement? And how does it influence his or her employment choices and success in the workplace?* Here NCPI aims to quantify the academic- and employment-related outcomes of a student's postsecondary education. Through data collected at the individual and institutional levels, the project tracks the paths of students as they progress through a college or university. It then relates their experiences—the kind of institution they attend, the curriculum they choose, co-curricular activities, enrollment patterns, financing issues, and work experiences—to their overall academic achievement and later employment. It also investigates the effects of a higher education market shaped by student choices, including how perceptions of college quality affect students' opportunities, focusing in particular on community colleges.

2. *How can we create a more powerful culture of teaching? How can we accelerate the education of under-prepared students?* In an effort to improve teaching and learning, NCPI seeks to improve the effectiveness of a number of professional development initiatives within community colleges and comprehensive postsecondary institutional settings. Research activities draw on several innovative teacher-development strategies that have been successful in both higher education and K–12 institutions. These include enhancing the culture of

teaching in colleges and universities, accelerating the learning of under-prepared students, and improving teacher preparation programs aimed at encouraging professional commitments to educating low-income students.

3. *What are the assessment mechanisms that improve student learning? How do institutions respond to external and internal pressures for assessing student learning?* NCPI is examining the effectiveness of assessment mechanisms as they relate to improving student learning from three distinct vantage points—from outside the institution through state policy and accreditation practices, from within the institution as it seeks to respond to change, and from the perspective of faculty and students, whose lives are affected by the shifting composition and preparedness of the nation's student population.

4. *How can we transform the environment within academic departments to drive the kind of real change that will improve undergraduate education? How can we improve both quality and productivity of academic institutions?* NCPI is focusing on how colleges and universities can change themselves to simultaneously improve the quality and productivity of undergraduate education. This project applies strategies found to be effective in business and industry to the academic enterprise, examines the potential of information technology as a stimulant and enabler of change, and explores other approaches to achieving quality assurance and accountability witainment. NCPI will identify, evaluate, and disseminate best practices for improving quality while containing costs in colleges and universities.

5. *How can we improve students' transitions between school and work—especially in light of changing economic and workforce demands? Can we create more effective links between educational institutions and employers?* Here NCPI draws on existing survey data and on data collected from three large-scale national surveys, conducted by NCPI, that capture the employment outcomes and value that employers, employees, students, and parents attach to postsecondary and other training providers.

6. *How are individual campuses as well as state systems of public higher education responding to demands for cost containment, increased accountability and affordable access?* Here, NCPI analyzes the nature of campus- and state-level restructuring efforts through case studies and analyses of national databases. The data analyses explore how colleges and universities are handling internal tensions related to academic program change and institutional governance. The overarching objective of these research projects is to identify reorganization and resource reallocation strategies that will help campuses and state systems become more productive.

Educational Significance of Center Work: Currently, postsecondary education is facing a set of extraordinary challenges. Policymakers, faculty, students, and administrators are confronted with a multitude of complex and oftentimes competing demands, from containing the rising costs of education to more efficient ways to structure internal processes; from accelerating the education of remedial students to improving student transitions from school to work; and from demonstrating the academic and employment-related outcomes of students' education to improving student learning and instructional quality. NCPI seeks to shed light on these and other vital issues facing postsecondary education and to offer constructive solution. The outcomes of this work will be helpful to policymakers and practitioners at all levels of the postsecondary education system. NCPI aims to help policymakers, employers, and institutions—including faculty, students, and administrators—adapt to, and even thrive amidst the fast-changing environment of postsecondary education.

OERI Contact: Gregory Henschel, 202–219–2082

Title of Study: Professional Development to Enhance Teaching and Learning

Principal Investigator(s): Lee Shulman, Stanford University and the Carnegie Foundation for the Advancement of Teaching, Palo Alto, CA

Program: National Educational Research Centers: National Center for Postsecondary Improvement (NCPI)

Funding Level: $1,416,573. Year 1 $241,059; Year 2 $292,370; Year 3 $287,468; Year 4 $291,374; Year 5 $304,302

Project Period: 4/1/96–3/31/01

Project Design: This project seeks to improve teaching and learning in postsecondary institutions through research activities that attempt to answer the following questions:

- How can we improve the effectiveness of postsecondary instruction?
- How can we increase the number of talented minority graduates who pursue teaching?
- How can we accelerate the education of under-prepared students?

The project will accomplish its goals through the development of innovative ways to promote and assess teaching, the successful application of teaching methods found to be effective in similar educational settings, and the improvement of K–16 teacher preparation programs.

The first research activity aims to foster a scholarship of teaching, making teaching more like research in that it is made available to others so that it can be discussed and evaluated by peers, can accumulate, add up, and contribute to the practice of one's colleagues. NCPI scholars will implement and document a method for faculty to collaboratively develop scholarship in teaching using course-based investigations, such as course-portfolios, a tool that NCPI investigators have developed and implemented with faculty colleagues from 4-year colleges and universities. NCPI's project will extend this work to community college faculty through the new Teaching Academy sponsored by the Carnegie Foundation for the Advancement of Teaching. This project will draw teacher-scholars from a variety of institutional types, including community colleges, in order to develop and document pedagogies specific to a variety of academic disciplines.

Participants will develop course portfolios and related documentation during a residency period at The Carnegie Foundation, on their home campuses during the academic year, and during a return visit to Carnegie to share results with each other and to plan for further dissemination on their campuses and disciplinary associations. At the same time, similar investigations will take place on campuses across the country, through the Teaching Academy Campus Program. Dr. Shulman has worked in close association with Pat Hutchings of the Carnegie Foundation for the Advancement of Teaching, to develop this innovative process for improving teaching. This part of the study will result in a refined theory of scholarship in teaching as well as the development of dissemination of new methods for representing and sharing scholarship in teaching.

This project will also investigate unique aspects of community college teaching through analyzing findings on teaching conditions at community colleges. Analyzing results from Carnegie's series of national faculty surveys, and descriptions of teaching and learning submitted to Carnegie's U.S. Professors of the Year Program, project personnel will map the variety of cultures of teaching and learning at community colleges, and ask how they compare with those at other types of higher education institutions. In addition, project personnel will work with community college colleagues to develop a protocol for pedagogical-ethnographies that can be used for self-studies of current practice for the improvement and support of teaching.

A second research activity lead by Dr. John Baugh, Stanford University, seeks to identify, develop, and test effective approaches for teacher preparation that encourage prospective teachers to dedicate themselves to teaching low-income and minority students. It has been observed that many talented minority students have abandoned careers in teaching at both the K–12 and community college levels. The project team is developing a network of community colleges that have high-level commitments to training teachers to serve low-income and minority students. It is from these institutions that innovative approaches will be identified and tested. The project team will develop and test a pilot program to encourage professional commitments to educating low-income students.

The project team will work closely together with innovators across a network of community colleges to document project designs and determine evaluation strategies.

Dr. Henry Levin, Stanford University, leads a third research activity that examines ways to replace current approaches to remediation. Higher education remedial courses have often been found inadequate in preparing students for later coursework, and have often replicated approaches that had failed in the previous academic experience of many students. The research team is bringing together innovators in the area of postsecondary remedial education, experts in educational program evaluation, and representatives from a range of institutional types to collaborate in the design, implementation, and evaluation of new learning approaches for underprepared students. Learning approaches to be tested will focus on skills in mathematics, writing, and reading. In this investigation, the research team will work together with the institutional representatives in implementing and rigorously evaluating alternatives to remediation.

Educational Significance of the Study: Given the disparities in student preparation, marketplace demands for highly skilled employees, increasing cost containment mandates, and technological advancements, the expectations for teaching in postsecondary institutions have never been more pronounced.

This project area focuses on improving the professional development of our nation's postsecondary faculty in order to improve student learning. In particular, much of the emphasis is on issues that impact underrepresented students and community colleges, since these institutions educate the majority of the students in the postsecondary educational system and have been understudied in the past.

Status of Study and Products: The project has been modified and expanded with Project Director Lee Schulman's appointment to the presidency of the Carnegie Foundation for the Advancement of Teaching. This new collaboration between NCPI and sible to expand the scope of the project's research by adding three new projects. First, the researchers have already completed the analysis of the Carnegie Foundation's 1997 National Survey of Faculty, a provide of community college faculty in comparison with faculty at other types of higher education institutions. A second project is now underway to identify innovative teaching at community college and to examine new faculty development initiatives. The third project will involve collaboration with community college colleagues to develop a protocol that can used to improve and support teaching. Campus work will begin in 1999.

The project on improving teacher preparation programs has also focused on broadening its efforts at increasing diversity among teachers. Toward this end, recent efforts have centered on innovative programs that begin within community colleges, including efforts to encourage teacher preparation for students from low income and minority backgrounds. Thus far community colleges in three western states have been contacted with plans to expand that network during the next year. Discussions are also underway with the Carnegie Foundation for building teacher academies that combine theory with practice to increase the supply of effective teachers.

Significant progress has been made in the project on remediation in higher education. Through a literature search and preliminary interviews with leaders in the field, a preliminary report has been completed analyzing the content and pedagogy of remediation, the consequences of remediation, and identifies exemplary remedial programs. The project held a conference that brought together experts, researchers, and practitioners in remedial education to discuss how best to address the needs of under-prepared students and to assist postsecondary institutions in developing, launching, and evaluating alternative approaches to remedial education. Following the conference, the researchers have begun working with the institutions in designing, implementing, and evaluating the pilot interventions and in disseminating information on such practices and the effective evaluation of remedial programs.

These products will offer specific and tangible ways for whole departments and the university as a whole to engage faculty in the improvement of teaching, and provide means for institutions to gauge quality—an important prerequisite for continuous improvement. Such efforts help institutions to focus on "educational productivity," obtaining increasingly efficient use of both public and private funds.

OERI Contact: Gregory Henschel, 202–219–2082

Title of Study: Student Learning and Assessment

Principal Investigator(s): Michael Nettles, University of Michigan, Ann Arbor, MI

Program: National Educational Research Centers: National Center for Postsecondary Improvement

Funding Level: $2,219,420. Year 1 $392,302; Year 2 $445,373; Year 3 $463,358; Year 4 $484,646; Year 5 $433,741

Project Period: 4/1/96–3/31/01

Project Design: In an era of escalating costs and corresponding calls by students, taxpayers and policymakers for state policies aimed at improving higher educational accountability, efficiency and effectiveness, there has been increased interest in effectively assessing the quality of teaching and learning. However, actual research—especially regarding the impact of assessment upon teaching and learning—has not kept pace with the expansion of assessment policies and practices.

This project examines the effectiveness of assessment mechanisms for improving student learning from three vantage points: from outside the institution through state policy and accreditation practices; from within the institution as it seeks to respond to change; and from the perspective of faculty and students, whose success is directly measured by such mechanisms.

The first research project examines the broad range of assessment policies and practices used by the 50 states and 6 regional accrediting associations in their efforts to improve student learning and instructional quality. Specifically, the researchers will:

- review and critique the written student assessment policies for each of the 50 states;
- design and implement a survey of state policymakers in order to understand the motivations for state policy, and to reveal the types of assessments employed, the roles of various levels of administration, and the uses of assessments; and
- perform case studies of six to eight state systems and two accreditation associations to learn about the impact of their policies.

A second research project examines what types of student assessment measures institutions have adopted, and the ways in which state policies and accreditation practices influence their adoption. Research will further show what types of leadership is needed to bring about the new assessments, the influence of various strategies to improve learning, and the impact of campus climate to support the adoption of such measures. The project also examines the effects of the assessments on student performance. Research methods will include:

- an extensive review and analysis of the literature to establish links between assessment methods and the policies used to promote those methods;
- a national survey of academic administrators to identify the assessment policies and practices in effect at a broad range of institutional types;

- an analysis that relates data from the case studies and survey of policymakers to the survey of academic administrators to reveal patterns of policies and resulting practices;
- a survey of students, faculty, and administrators to identify attitudes toward institutional policies and practices;
- intensive case studies which cut across and are integrated with field work under the other areas of study; and
- an extensive review of all surveys and case-study information with key players at the case-study institutions themselves.

A third area of research examines how new assessment policies and practices impact students and faculty, how change is brought about, the key actors in implementing the reforms, and the agencies and offices involved. The study will show how assessment is incorporated into a wide range of educational reform efforts. This area of analysis will be supported by:

- an analysis of existing data resources to discover their utility in helping to understand how curriculum, pedagogy, and assessment influence student learning;
- a study to determine how student self-concept, aspiration, and level of engagement are affected by assessments;
- case studies of key institutions that exemplify current reform movements;
- the development of indicators to identify promising practices for monitoring student progress;
- the extensive use of data developed in other topical areas of this study; and
- a survey of students and faculty.

Educational Significance of the Study: The study of student learning and assessment will provide higher education policymakers and practitioners a coherent portrait of changing practices in teaching, learning, and assessment that will assist with reforms and improvements affecting students, faculty and academic programs. Specifically, the review of state policies will reveal model policies for states and accreditation associations for improving policies and standards at the institutional level. The study will also lead to a guide to "what works" in assessing student performance.

Status of Study and Products: This project has produced a report on the status of assessment policies and practices in 50 states and 6 regional accreditation associations. In addition, researchers have completed a report on improving organizational and administrative support for student assessment. This report is based on an extensive review of research literature on the topic. A draft paper for journal submission is currently being completed.

The research team has also designed an institutional survey to be sent to chief academic officers at accredited 2-year and 4-year postsecondary institutions in the United States in early 1998.
A report that reviews the strengths and limitations of national data resources in evaluating student assessment was also completed. A handbook will be completed in Spring, 1998.

OERI Contact: Gregory Henschel, 202–219–2082

Title of Study: Postsecondary Organizational Improvement: Restructuring and Beyond

Principal Investigator(s): Patricia J. Gumport, Stanford University, Palo Alto, CA

Program: National Educational Research Centers: National Center for Postsecondary Improvement

Funding Level: $2,022,953. Year 1 $333,286; Year 2 $377,157; Year 3 $450,573; Year 4 $450,178; Year 5 $411,759

Project Period: 4/1/96–3/31/01

Project Design: This project will describe the range of contemporary demands that call upon postsecondary institutions to examine the outcomes they produce and to justify the resources required to produce them. Focusing on public higher education, the project will analyze contemporary restructuring practices and their emerging consequences, and identify exemplary practices for the redesign of core academic and administrative functions. The research will incorporate data from national databases alongside selected case studies.

This project seeks answers to the following questions:

Institutional Restructuring. How have colleges and universities attempted to restructure themselves in response to contemporary economic and political demands? What have been the intended and unintended consequences of these restructuring efforts? What obstacles have institutions encountered? To what extent have institutions met contemporary demands, including those of the public, the students, and their families?

State System Restructuring. How have state systems of public higher education responded to contemporary economic and political demands? What strategies have been pursued and to what effect? To what extent is the long-term public interest affected by these demands?

Exemplary Practices. What has worked? Particularly within public universities and colleges, are there exemplary institutional and state system practices that may inform others as they seek to adapt to contemporary demands? For example, to what extent are institutions looking beyond conventional campus solutions? Are administrations outsourcing educational services as well as administrative functions? Are public institutions increasingly forced to rely upon private funding sources? With what consequences for the educational enterprise? To what extent are institutions emulating business models to restructure their academic practices? To what extent are these practices characterized as organizational improvement?

In order to analyze whether restructuring at a broad range of institutional types is resulting in organizational improvement, some common approaches to restructuring will be investigated. In recent years, three patterns of restructuring have emerged that warrant careful study:

Reengineering. This approach encompasses changing processes and practices to maximize efficiency and flexibility for customer satisfaction. The central thrust involves budget discipline and cost containment as well as assessing the efficiency of resource allocation to administrative and academic functions. This approach also entails process redesign methods and changes in institutional culture that have been developed in the private sector. Such private sector techniques usually involve a move away from institutional bureaucracy and hierarchical units toward a model of interdependent and networked work processes. Total Quality Management, or TQM, is one example of this approach.

Privatization. Institutions are reconsidering which support functions (e.g., food services, bookstores, and janitorial services) are appropriate to maintain for themselves, and which should in turn be "outsourced" to private sector providers. It is unclear to what extent this approach is being applied to academic services. Privatization is evident in financing practices as well as public institutions experienced state appropriations that fell short of budget projections, revenue from tuition and fees, and other private sources have increased to unprecedented levels.

Reconfiguring. These initiatives involve the reconfiguration of organizational structures into new organizational forms. As with the other approaches, the goal is to improve quality, efficiency, and responsiveness. When applied to academic programs and personnel, reconfiguring encourages institutions to reevaluate their existing resource commitments alongside potential for new forms of intercampus cooperation.

National and state trends will be analyzed with states as the initial unit of analysis. Three states were chosen for preliminary study: California, Virginia, and Oregon. These states were selected due to the wide range of pressures they have faced and the range of restructuring approaches that have been attempted.

The methods to be employed in this research include comparative case study analysis drawing upon interviews and detailed review of institutional financial and administrative records. Furthermore, the study team will analyze national data sets using standard statistical methods to identify financial trends.

Educational Significance of the Study: In the 1990s external demands for improved access, accountability, quality of programs, cost containment, and the economic development of the state and region have forced colleges and universities to become more aware of and responsive to market concerns. The results of this project's empirical investigation will benefit institutions as well as state systems of public higher education that are currently restructuring or planning to do so in the future. The work will provide explicit recommendations to both state officials and institutional administrators.

Status of Study and Products: Much of the conceptual framework has been completed, resulting in a literature review and bibliography on the adaptation of higher education organizations to changing environmental demands. Several publications have resulted so far, including an essay in *Daedalus* on public universities as academic workplaces and two forthcoming chapters on restructuring in *Higher Education: Handbook of Theory and Research.*

In addition, a preliminary analysis has been completed which uses national data sets to study 20-year trends in revenue patterns of postsecondary institutions. Fieldwork for the case studies is scheduled to begin in 1998.

The project will culminate in a report or reports detailing recommended and exemplary practices and principles for institutional reorganization to improve resource allocation and optimization. Policy recommendations will be included. The study will also result in recommendations about the ongoing development of national surveys, conducted by the National Center for Education Statistics (NCES) and others, so as to preserve important trend lines and add additional and needed variables.

OERI Contact: Gregory Henschel, 202–219–2082

Title of Study: Improving Productivity, Accountability, and Efficiency

Principal Investigator(s): William F. Massy, Stanford University, Palo Alto, CA

Program: National Educational Research Centers: National Center for Postsecondary Improvement

Funding Level: $1,244,593. Year 1 $230,460; Year 2 $238,494; Year 3 $256,109; Year 4 $261,700; Year 5 $257,830

Project Period: 4/1/96–3/31/01

Project Design: This project focuses on the management of postsecondary institutions and how to change their processes to improve quality, productivity, and efficiency. The project applies quality process concepts to postsecondary education, examines the potential of information technology as an enabler of change, and explores innovative approaches to achieving quality assurance and accountability within the context of cost containment.

The project seeks to answer two questions:

- How can the environment within academic departments and similar organizational units be changed to enable and drive the kinds of improvement that will be required to increase the educational quality of undergraduate education, to redress the teaching-research balance, to utilize information technology in effective ways, and to improve efficiency?
- How can postsecondary education institutions change themselves to produce the aforementioned improvements and to re-engineer academic support services for improved quality and productivity?

The overall objective of this project is to test potential answers to these questions in ways that can be put into operation by institutions and faculty. The project will use a wide array of investigative methods to accomplish its goals, including:

- a national roundtable of leaders in higher education and private-sector quality processes;
- interviews with quality experts from leading companies in the private sector;
- site visits at institutions identified as engaging in innovative information technology applications with a focus on identifying factors that affect successful adoption;
- focus group interviews with faculty, administrators, department chairs, and deans; and
- interviews with key organizations in the quality movement including the American Productivity and Quality Center, the Sloan Foundation's Human Resource Network, and the National Association of College and University Business Officers.

Educational Significance of the Study: A variety of educational and training materials will be produced for postsecondary institutions, policymakers, and other audiences, including:

- a report relating ideas from the quality culture of business to undergraduate education—providing an appropriate vocabulary to help ease faculty resistance to "business language;"
- guidelines for departments that want to implement quality culture ideas and quality processes;
- a forward-looking view of cost-containment showing how information-technology based re-engineering can alter institutional economics;
- a set of quality assurance and accountability principles compatible with modern quality principles and the current postsecondary education environment which can be used at the departmental, institutional, and system-wide levels; and
- a comprehensive benchmarking system for improving quality while containing costs that incorporates both quantitative and qualitative elements and includes academic processes as well as administrative and support services.

This indepth work will move beyond past piecemeal efforts to investigate the applicability of quality principles in higher education, and firmly test the credibility of certain approaches, tested in industry and business, for use in higher education.

Status of Study and Products: A report was completed and submitted which summarized discussions from the research team's National Roundtable on Teaching and Learning Quality Processes. In addition, the report, *Seven Lessons from the Business Quality Literature,* a literature review on quality assurance in higher education, and interviews with educational organizations in the United States and abroad were completed, as was the report, *Teaching and Learning Quality-Process Review: The Hong Kong Programme*.

Research has been completed on the project's resource allocation benchmarking project and a relationship has been formalized with the American Productivity and Quality Center (APQC) to include future work with their Higher Education Best Practices Institute.

Research is also underway on a benchmarking study on faculty roles and rewards to be cosponsored by the Pew-Knight Higher Education Project. Babson College, Boston, MA, was selected as an initial site with additional sites to be chosen.

The research team has selected three institutions for their field research on innovative applications of information technology: Northwest Missouri State University in Maryville, Missouri; University of Illinois, Urbana/Champagne, Illinois; and Eastern New Mexico State in Portales, New Mexico. The research will focus on the use of technology in undergraduate teaching and learning with particular interest on how technology is utilized in a broader quality framework. Campus visits were conducted in October and November 1997.

Upcoming recommendations for institutions and departments to benchmark academic practices according to quality principles will allow for a new focus on the quality of instruction and curriculum and the use of technology in teaching.

OERI Contact: Gregory Henschel, 202–219–2082

Title of Study: Transitions in Education and Work

Principal Investigator(s): Peter Cappelli, University of Pennsylvania, Philadelphia, PA

Program: National Educational Research Centers: National Center for Postsecondary Improvement (NCIP)

Funding Level: $2,042,106. Year 1 $603,729; Year 2 $445,460; Year 3 $370,796; Year 4 $267,466; Year 5 $354,655

Project Period: 4/1/96–3/31/01

Project Design: The research project on Transitions in Education and Work aims to improve students' transitions between school and work, especially in light of changing economic and workforce demands, and create more effective links between educational institutions and employers.

In addressing these challenges, the project examines how students and labor-market entrants move between school and work to get established in the workforce. The project examines how students, schools, and colleges get information and incentives from employers about what skills and knowledge they need.

In attempting to better understand changes in school and work transitions and their potential impacts on students, the following questions will be studied:

- What demographic factors seem to be driving the change in the school-to-work transition? How do shifts in the economy—in particular, firm restructuring strategies—differentially affect job opportunities for youth?
- What are the consequences of relatively orderly versus chaotic youth labor market experiences?
- Do school-to-work programs have more beneficial effects for women and minorities?

In order to address the factors which are shaping the flows between school and work, researchers will examine the role of signals, information, and incentives as students move from school to work, including:

- How students respond to changing signals from employers regarding the demand for skills and the rewards for those skills;
- The effects of financial aid on student access to postsecondary education and institutional choice; and
- The impact of higher education admission standards and financial aid on secondary schools.

Another area of study examines the role of educational institutions and employers in helping to shape student/worker decisions and school and work transitions. Research questions currently being examined include:

- When firms outsource significant portions of production or service delivery, what is the impact on workforce skills development?

- What is the firm's role in providing training opportunities?

- How do changes in school-to-work initiatives affect student decisions regarding postsecondary education?

- What do employers rely upon in making hiring decisions for entry-level, young applicants from high schools and community colleges?

Research activities draw on existing literature and survey data as well as on new data collected from field research. The work also draws on three national surveys conducted with the Bureau of the Census in collaboration with another National Education Research Center, the Consortium for Policy Research in Education (CPRE):

1. The National Employer Survey, which asks employers detailed questions about their workforce's education and training;

2. The National Employee Survey, which assembles a sample of workers drawn from establishments participating in the Employer Survey; and

3. The National Survey of Heads of Households Aged 35–55, which includes the experiences of students' parents.

To increase the scope of possible findings, the surveys will be enhanced through careful matching of the samples for each survey. This will allow a close correspondence between findings from each survey allowing broader issues to be studies and for findings to be confirmed across surveys.

Educational Significance of the Study: By examining the flow of young people through postsecondary institutions and into the workforce, the effect of admissions and financial aid policies on students and our society, and the problems students face when they move from school to work and the ways they respond to labor market signals, this project will inform policy initiatives and practice that can significantly improve student transitions from K–12 institutions to postsecondary education and the world of work.

The project will also identify the employment outcomes for those who attend postsecondary education, and show the value that employers, employees, students, and parents attach to schools, colleges, universities, and other training and education providers.

Status of Study and Products: A study on youth labor markets has been completed. This found evidence of positive effects of early job stability on adult wages. A report was also completed that shows the relationship between tuition pricing, student aid, and access to education and choice of institution.

Initial findings from the National Employer Survey describing the extent to which firms participate in work-based learning were released. The National Employee Survey instrument has been developed and cleared for field use in early Spring 1998.

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In the coming months, the Bureau of the Census and CPRE (another of OERI's Centers) will be collaborating with NCPI to develop a series of reports on worker training, retraining, future demand for higher education, and knowledge skills needed for the transforming economy. The reports will offer explicit policy recommendations based on the research.

OERI Contact: Gregory Henschel, 202–219–2082

Title of Study: Postsecondary Achievement and Employment Outcomes

Principal Investigator(s): Robert Zemsky, University of Pennsylvania, Philadelphia, PA

Program: National Educational Research Centers: National Center for Postsecondary Improvement

Funding Level: $897,814. Year 1 $172,676; Year 2 $181,194; Year 3 $163,333; Year 4 $218,200; Year 5 $162,411

Project Period: 4/1/96–3/31/01

Project Design: This project investigates how participation in postsecondary education affects students' academic achievement and employment outcomes. The research analyzes existing data sets on postsecondary institutions, collects new data at postsecondary institutions, and aims to develop "institutional tool kits" to help campuses measure the contributions they have made to their students' academic achievement and employment outcomes.

Through data collected at the individual and institutional levels, the project tracks the paths of students as they progress through a college or university. It will then relate their experiences—the kind of institution they attend, the curriculum they choose, cocurricular activities, enrollment patterns, financing issues, and work experiences—to their overall academic achievement and later employment.

Initial research has focused on the development, testing, and dissemination of a new "market taxonomy" for postsecondary education that includes information from most baccalaureate institutions in the United States (over 1,200). The study developed and defined categories in which institutions can meaningfully define their place within the market for postsecondary education by testing their market position and the "products" that they offer.

Study questions include:

- How are institutions situated with respect to the actual demand for higher and postsecondary education that is, the actual goals and needs of students and their participation patterns, shaping the development of institutions?

- Are there specific patterns of demand, and how should institutions of various kinds adjust to maximize their ability to meet this demand, thus meeting social needs, efficiently competing with one another, and achieving efficiencies for the system as a whole?

The methodology combines data from the Integrated Postsecondary Education Data System (IPEDS) and information contained in the College Board and Peterson's Guides, including:

- admit/yield rates, from the College Board and Peterson's Guides;
- percentage of freshman who graduate with a BA in 5 years, from the same sources;
- the percentage of enrollment that is part-time, from the IPEDS data;
- the total undergraduate enrollment, from IPEDS; and
- the total number of BAs/BSs awarded, also from IPEDS.

Educational Significance of the Study: This project aims to quantify the academic- and employment-related outcomes of a student's postsecondary education. It also investigates the effects of a higher education market shaped by student choices, including how "college quality" affects students' future opportunities, focusing in particular on community colleges, which have been significantly understudied.

These researchers have developed a market taxonomy that offers an explanation of how the market has shaped the evolution of higher education over the last 20 years. By providing an overall structure of the market for baccalaureate education, the taxonomy documents how institutional economics, faculty profiles, student characteristics, educational attainments, labor market outcomes, and civic activities differ across market segments.

The taxonomy also provides a framework for institutions to determine strategies for dealing with public policy issues such as the cost and price of a college education. The taxonomy also creates a tool that allows institutions and public policymakers to evaluate the distribution of different kinds of students across the range of providers competing in their local or state market. Clarity on such matters permits meaningful discussion of the different roles institutions play in the economy and society, and is an improvement on classification schemes that depend on less meaningful measures such as resource inputs (e.g., student faculty ratios or library holdings), reputation, or student scores on entrance examinations.

The analysis supporting the institutional taxonomy shows that institutions have highly identifiable and specific patterns of demand that reveal an institution's competitive position. These new market-based categories have not been previously identified or rigorously tested. This work allows institutions to move beyond prevailing institutional categorizations, substituting ones that offer insight into student demands and other market factors that more accurately the institution's development.

Status of Study and Products: The results of the research on the higher education market clearly point to a highly ordered market for postsecondary education that is almost exclusively defined by an institution's "market position." The analysis for the baccalaureate portion of the postsecondary education market was recently published as a special insert in *Change* magazine, in addition to being featured in a recent issue of *Business Week*. An analysis of 2-year institutions will appear in an upcoming issue of *Change*.

A related study has been completed which captures the historic context about the nature and value of postsecondary educational outcomes. The study shows when, where, how, and why people since World War II have used, or not used, educational results—particularly academic achievement and employment outcomes—when gauging the effectiveness of particular institutions and the effectiveness of the postsecondary educational system.

Upcoming work includes an analysis of the community college sector along the lines of the already-released work on 4-year institutions. Such findings will be significant in shaping discussions of state plans to meet the upcoming increase in demand for higher education services. This new work will enable states and other funders to improve the efficient expansion of higher education services to meet the true demands of students and the economy.

OERI Contact: Gregory Henschel, 202–219–2082

Title of Study: Thematic Review: Transition from Initial Education to Working Life

Principal Investigator(s): Robert Zemsky and Robert Sweet, University of Pennsylvania, Philadelphia, PA and Organization for Economic Cooperation and Development (OECD), Paris, France

Program: National Educational Research Centers: National Center for Postsecondary Improvement

Funding Level: $65,000

Project Period: 1/1/98–6/30/99

Project Design: The thematic review examines young people's transition from initial education to work within a lifelong learning framework. It is believed that the process by which young people move from initial education to work can influence the extent to which the benefits of education are retained, and opportunities for new learning are opened up. From this perspective, improving transition to work means more than getting young people into work. It also requires helping them to become effective learners throughout their adult lives so that they can remain productive and engaged citizens of their countries.

The methodology involves examining, within a comparative framework, country-specific problems and policy responses in the transition from initial education to working life and synthesizing those country experiences to generate insights and findings relevant to OECD countries as a whole. The comparative approach provides countries with an opportunity to learn more about themselves by examining their experiences against those of other countries. It also provides an opportunity to expand the broader knowledge base by accumulating international evidence on the impact of policy reforms.

First, the United States will prepare a country background report following the guidelines laid out by OECD. This report will describe briefly the country's economy and unique features of its education and training system. The appendices to the country report will include statistical information to all readers to further explore issues. A steering committee will oversee the project. Once the report is reviewed by the steering committee, it will be sent to OECD. The expert panel convened by OECD will receive the report and schedule site-visits to the United States. At the conclusion of the visits the members of the expert team will prepare their own report, entitled, "The Country Note." OECD then will prepare a comparative report based on the two reports for the meeting of national representatives to be held at OECD in mid-1999.

Educational Significance of the Study: The thematic review process is a relatively new form of OECD activity in the field of education. A thematic review is intended to draw out key findings and conclusions of comparative interest. The first round of this project included six countries: Australia, Austria, Canada, Czech Republic, Norway, and Portugal. The second round, which began January 1998, includes Finland, Denmark, Hungary, Japan, U.K., Sweden, and the U.S.A. The most significant issue is why certain public and private policies facilitate transition from initial school to work function effectively in various countries and not in others and how U.S. compares to them.

Status of Study and Products: A team directed by Robert Zemsky is preparing the country background report. The steering committee meeting is scheduled for May 27, 1998, to review the report. The final country background report is due to OECD in August 1998.The expert team site-visits are scheduled for October 1998. The country note from OECD is scheduled for delivery to the United States by February 1999.

OERI Contact: Nevzer Stacey, 202–219–2111

National Center for the Study of Adult Learning and Literacy (NCSALL)

Title of Project: National Center for the Study of Adult Learning and Literacy (NCSALL)—Center Overview

Principal Investigator(s): John Coming, Harvard University, Graduate School of Education, Cambridge, MA in collaboration with World Education, Inc., Boston, MA; University of Tennessee, Knoxville, TN; Rutgers University, New Brunswick, NJ; and Portland State University; Portland, OR

Program: National Educational Research and Development Centers

Funding Level: $12.5M; Year 1 $2.5M; Year 2 $2.5M; Year 3 $2.5M; Year 4 $2.5M; Year 5 $2.5M

Project Period: 8/01/96–7/31/01

Center Mission and Focus: NCSALL is a collaborative effort between the Harvard Graduate School of Education and World Education, Inc. (Boston). The Center for Literacy Studies at The University of Tennessee, Rutgers University and Portland State University are NCSALL "partners." One more partner in the Midwest will be added in the future.

A singular theme unifies the research and dissemination strategies of NCSALL's 5-year effort: Improving the quality of educational programs for adult learners. NCSALL concentrates its efforts and products on educational programs that serve adults who score low on tests of basic skills, have limited English language proficiency, or do not have a high school diploma. These programs include adult basic education (ABE), English for speakers of other languages (ESOL), and adult secondary education (ASE) instruction in the full range of programs (e.g., family literacy, volunteer tutoring, workplace literacy, libraries, and correctional facilities), but primarily in adult learning centers.

In 1994, *World Education* conducted a study to identify the research topics of primary importance to the field of adult literacy. The Center's research is seeking answers to four critical questions that emerged from this work:

1. *How can the motivation of individual adult learners be sustained and enhanced?* NCSALL is conducting studies on: student motivation and persistence, and the developmental requirements of adult roles.

2. *How can classroom practice be improved?* The Center is conducting studies on: diagnosing adult reading difficulties, applying the theory of multiple intelligences in adult education classrooms, how family and community support affects the use of literacy in daily lives out of the classroom, and the mutual benefits on literacy and health behavior of introducing health topics into ABE, ESOL, and ASE classes.

3. *How can staff development more effectively serve adult learning and literacy programs?* Center researchers are studying the relative effectiveness of three different common models of staff development for adult educators.

4. *What impact does participation in adult learning and literacy programs have on an adult's life and how can this impact be assessed effectively?* The Center is conducting studies on: the impact of participation in adult learning programs and the development of appropriate measures of impact, the impact of the GED on future earnings, and a national longitudinal study of adult learners and the long-term impact of their participation in adult education programs.

The projects outlined above employ a variety of research methodologies, from classical quantitative and qualitative approaches to teacher inquiry and participatory action research.

NCSALL has launched an ambitious dissemination program which has connected to the field of policy and practice in several ways:

> *Focus on Basics* is NCSALL's quarterly publication for practitioners, meant to bring research findings and insights to the awareness of practitioners. *Review of Adult Learning and Literacy* is an annual volume of scholarly reviews of major issues, current research, and best practices. The Practitioner Dissemination and Research Network (PDRN) is a group of practitioners from numerous states who come together to learn about research in the field and return to apply these ideas in their classrooms and disseminate the findings to other adult educators in their respective states. NCSALL's web site provides electronic access to information on current research projects, contains information on NCSALL publications, and links to other adult education and literacy sites. NCSALL is working with the Department's National Institute for Literacy and the Division of Adult Education and Literacy in the Department's Office of Vocational and Adult Education (OVAE) to help the field articulate a national vision for improving and expanding program services, and to set forth a comprehensive national research and development agenda for this field. This effort will be completed at a national adult literacy summit to be held in 1998. Finally, NCSALL is collaborating with the Department's Planning and Evaluation Service to coordinate several of its research projects with the overlapping interests of other Department-sponsored studies.

Educational Significance of Center Work: Like all OERI research and development (R&D) centers, this organization combines programs of research, development, and dissemination to make a significant impact on its area of focus—adult learning and literacy. NCSALL distinguishes itself among other R&D centers by deliberately connecting its research agenda and activities to the expressed interests and information needs of practitioners and policymakers in the field, and creating explicit linkages to the field so that its findings and products will reach those who can use them to improve educational practice and service delivery.

OERI Contact: Harold Himmelfarb, 202–219–2031

Title of Study: Learner Motivation

Principal Investigator(s): John Comings, Harvard University Graduate School of Education, Cambridge, MA

Program: National Educational Research and Development Centers: National Center for the Study of Adult Learning and Literacy (NCSALL)

Funding Level: $528,909. Year 1 $141,890; Year 2 $89,839; Year 3 $95,243; Year 4 $98,858; Year 5 $103,079

Project Period: 8/1/96–7/31/00

Project Design: This study seeks to improve our understanding of how adults might be better motivated to learn basic skills. Specific questions that guide this research include:

- What are the sources of learner motivation and the barriers to learner persistence in adult learning and literacy programs?
- What teaching strategies motivate the adult learner most effectively?
- What obstacles prevent adults from staying in a program?

The researchers will conduct interviews with adults enrolled in education programs to build a comprehensive picture of the factors that work against or support the motivation of adult learners. The results from the interviews will be further refined through focus groups of learners. These findings will be used to develop approaches to improve motivation of students enrolled in adult education programs. Treatments will be tested against a control group.

The treatment or intervention will be developed after the results of the interviews and focus groups are analyzed. Current thinking suggests a participatory exercise in which all adult learners in a program or class will help fellow participants (or classmates) identify forces that are hindering them from achieving an educational goal. Once identified, the group would plan together how to build on the positive and overcome the negative forces. In this way, adult learners would take it on themselves to change those things that are inhibiting their learning and leading to early dropout. If successful, the exercise could be part of the intake process and lead to an assessment of learning needs and goals, or it could be part of instructional exercises in the classroom.

As an addendum to this study, NCSALL has been asked to anlayze dropout data from 14 programs that are part of the What Works Literacy Partnership (WWLP), funded by the Lila Wallace Readers Digest Foundation. These programs have been identified as well run and successful. The programs, however, do not have a good sense persistence rates. NCSALL will help the 14 programs analyze these rates for each site and across sites. The goal of the study would be to have a clear base-line of dropout and persistence rates in adult education programs where program quality is probably not the major contributing factor to dropout. In addition the detailed data on the 14 programs will identify elements common to effective programs based on information from approximately 1,500 students.

Educational Significance of the Study: This study will have a direct impact on improving practice. Center staff will develop a training approach and publish a manual that can be used by all practitioners to change the way that they work with adult learners. The new approaches will be designed to maximize adult participants' motivation to learn.

Status of Study and Products: A review of the literature has identified four domains where factors help or hinder persistence in adult learning: within the individual, the classroom, the educational program, and the environment of the adult learner. An interview questionnaire that probed all four domains was drafted, field tested, and refined. Design of the subject sample is being refined. Sites for interviews are being identified in the six New England states. Data collection began in the third week of October, and the first round of interviews with 220 subjects should be complete in December. A unique aspect of this work is to introduce the participants to a classroom activity that both prepares the subjects for the interview and helps the research team to identify appropriate vocabulary for the interviews. The team is collaborating with the What Works Literacy Partnership (WWLP) funded by the Lila Wallace Readers Digest Foundation to also conduct an adjunct study that will provide 14 case studies that analyze the data for each site and then across cases to draw conclusions that would be useful to the field. The study will result in several papers, including: an investigation of forces affecting motivation to persist in adult education programs; a study of retention rates, and a report on the factors that most affect perion. The project will also produce manuals for staff development based on the study of effective practices.

OERI Contact: Harold Himmelfarb, 202–219–2031

Title of Study: Adult Development

Principal Investigator(s): Robert Kegan, Harvard Graduate School of Education. Cambridge, MA

Program: National Educational Research and Development Centers: National Center for the Study of Adult Learning and Literacy

Funding Level: $551,349. Year 1 $0; Year 2 $188,387; Year 3 $166,035; Year 4 $197,927

Project Period: 8/1/97–7/31/00

Project Design: The National Institute for Literacy (NIFL) has joined the chorus of people calling for awareness of, and opportunities to develop, learning as a lifelong endeavor. NIFL sees literacy development as equipping adults with what they need to know and be able to do to succeed as adults in today's world. Thus, they are shifting the agenda for adult learning from an emphasis on remediation to a focus on preparing adults for the future through supporting the development of role competence. This project will work with NIFL's *Equipped for the Future (EFF)* project, which is producing curriculum standards and performance indicators for literacy classes that are focused on developing competencies in the adult roles of parent, worker, and citizen.

The study has three overall goals:

- to understand the ways in which adult learners' current ability levels shape their experiences, definitions and self-expectations of the roles of parents, workers, and learners;
- to identify the ways that adult learners' current ability levels affect their motivation to learn, their experience in an educational program, and what was actually learned; and
- to describe those educational practices and processes which students and teachers depict as being particularly helpful to increase learners' understanding of their roles, their capacity to fulfill those roles, and their perceptions of their abilities as parents, workers, and citizens.

Data will be collected from three different programs, a workplace site, a parenting skills program, and an adult basic education program. At each site 20 adult learners and their teacher/trainers will be interviewed, tested, and observed at the beginning of the program. (Only learners will be tested.) Focus groups will be held with 10 learners at each site, and approximately 3 months after the education program is completed, all 20 of the learners and their teacher/trainers will be reinterviewed, and learners will be retested. Interview and test instruments will cover both academic skills as well as measures of stress, satisfaction, efficacy, success, motivation, and competence.

Educational Significance of the Study: This study offers a framework for integrating the field's current yet still prominent emphases on skill development and role competencies, and it will contribute to the development of a coherent and comprehensive theory of adult education and lifelong learning. While a fairly extensive knowledge of children's development serves to guide the curricular agenda and creation of effective learning environments for the young, educators know considerably less about how an adult's level of development actually shapes that individual's perceptions of what is important to learn and what is actually learned. The integration of a developmental perspective into course design and content presentation considerations could offer adult educators a valing classroom practice.

Status of Study and Products: The research team has made conceptual decisions about research site selection criteria and participant selection criteria. It is currently negotiating with the Polaroid Corporation, Cambridge, MA, for its workplace learning site. It has designed developmental vignettes (i.e., problem solving measures that will be used to assess an individual's developmental level and role competence in specific areas); and has initiated planning of timelines and responsibilities. The team developed a preliminary plan for its data management system including plans for storing data and transcriptions. Planning has also started for measure administration and reliable scoring of quantitative and qualitative data. The team has identified several established measures of stress, satisfaction, competency, efficacy, and motivation.

Products will include: dissemination of research findings in multiple formats for diverse audiences; a case-based conceptual monograph describing how developmental levels of adults affect their capabilities as parents, workers and citizens, and the educational practices that enhance development and those competencies; a summer institute for practitioners, educational researchers, professional development staff and scholars to disseminate the research-based knowledge gained from the study as well as the applications for effective adult education practice; and professional development and training through on-site consultation with practitioners who run adult learning programs.

OERI Contact: Harold Himmelfarb, 202–219–2031

Title of Study: Adult Reading Diagnostic Study

Principal Investigator(s): John Strucker, Harvard Graduate School of Education, Cambridge, MA

Program: National Educational Research and Development Centers: National Center for the Study of Adult Learning and Literacy

Funding Level: $514,726. (plus $200,000 from OVAE). Year 1 $206,301; Year 2 $158,207; Year 3 $150,254

Project Period: 8/1/96–7/31/99

Project Design: This study focuses on improving how adults learn to read. Specific questions guiding this work include:

- What are the specific reading barriers that are causing 90 million Americans to score at low levels on reading proficiency tests?
- What are the entering reading proficiency levels of adults enrolled in Adult Basic Education (ABE) Programs?
- What general types of readers or patterns of adult reading development occur in the ABE population?
- What specific strengths and weaknesses characterize their patterns of reading?

A sample of 300–400 learners enrolled in ABE classes in New England will include individuals who are enrolled in programs in a wide variety of settings such as the workplace, prevocational settings, family settings, correctional institutions, school departments, community colleges, and community-based organizations. The sample will be constructed to reflect the diversity of the U.S. ABE population (in terms of age, gender, levels of educational attainment, income, ethnicity, language, culture). Data will be collected from all adult learners in the study regarding their backgrounds and assessing their reading abilities. In addition, a small number of typical respondents will be chosen for closer study. Case studies of these learners will be developed to include more detailed information, additional diagnostic and psychological assessment, and interviews with the respondents' ABE teachers, and classroom observations in their ABE center.

Educational Significance of the Study: The results of this study will contribute to practical knowledge by:

1. providing practical descriptions of low-literacy adults that can be readily understood by practitioners and policymakers;
2. identifying possible subtypes of learners who may have previously been unnoticed or unidentified;
3. testing a number of propositions about adult reading difficulties such as those pertaining to learning or reading disabled; and

4. contributing to the development of a shared vocabulary and frame of reference that will be useful to researchers and practitioners in focusing discussions of adult literacy.

This study will provide an accurate map of the actual reading strengths and needs of individuals enrolled in adult basic education programs. It will provide the first national diagnostic reading assessment of the ABE population. Detailed portraits of U.S. ABE learners will be a starting point for national efforts to improve and update teaching methods, curricula, textbooks, assessment tools, the structure of ABE classes, the design of learning centers, and the implementation of teacher training programs. This has the potential, for example, to lead to adult literacy classes that are grouped or subgrouped by reading patterns, curricula and teacher training that are focused on these different groups, and adult learning and literacy initiatives that are designed to serve these different groups. This study will also produce recommendations for appropriate types of further diagnostic assessment.

Status of Study and Products: The battery of student tests has been piloted and the results have enabled researchers to select those aspects of each test that are most relevant for the national study. The pilot questionnaire is being refined and shortened. Questions on learning disabilities will be added. (The Center is working with the Federal government's National Institute for Literacy, Washington, DC, in this arena.) Special test batteries are being developed and piloted for native speakers of Spanish and all other English for Speakers of Other Languages (ESOL) students. Piloting has also identified which tests are especially difficult to administrator or difficult of different testers to administer uniformly. A Testing Manual is being created to assist the ABE/ESOL teachers who will be administering the battery and questionnaire. The sample design has been defined and communications with state adult education agencies has begun in order to select appropriate sites and learners within those sites to participate in the survey. The project will produce a technical report on training in diagnostic assessment as well as training materials in this area. It will produce a paper comparing respondents' regular reading assessments with the assessment results from this study. A third paper will report on the clusters of students with similar reading profiles and suggest special teaching approaches for each cluster.

OERI Contact: Harold Himmelfarb, 202–219–2031

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Title of Study: Adult Multiple Intelligences

Principal Investigator(s): Silja Kallenbach and Julie Viens, World Education, Boston, MA and Harvard Graduate School of Education, Cambridge, MA

Program: National Educational Research and Development Centers: National Center for the Study of Adult Learning and Literacy

Funding Level: $802,640. Year 1 $203721; Year 2 $204,555; Year 3 $142,972; Year 4 $122,616; Year 5 $122,776

Project Period: 8/1/96–to 7/31/01

Project Design: Howard Gardner of Harvard University first introduced the theory of Multiple Intelligences (MI) in 1983. Traditionally conceptions of intelligence focus on language and mathematical abilities. Gardner broadens this traditional view to include six other intelligences: spatial-visual, bodily-kinesthetic, musical, interpersonal, intrapersonal, and naturalist. According to Gardner, all humans possess these eight intelligences in varying degrees. These intelligences are used by humans in various combinations within particular fields such as architecture, carpentry, dance, gardening, composing music, literature, and so on. MI theory is not a theory of education. Therefore, there is no single approach for applying MI theory. It suggests, however, that educational material might be learned better if presented in a number of ways that appeal to different intelligences. That theory has been applied in K–12 classrooms, but this project represents the first concerted and substantive effort to understand and apply MI theory to adult education.

The Adult Multiple Intelligences (AMI) Project is working with nine teacher-researchers on the development of MI-based instructional strategies through classroom-based research projects. This is a qualitative study that uses teachers as researchers to document what is being done as it is implemented, and what impact the strategies seem to be having. Several general questions are guiding the research:

- How can Multiple Intelligences (MI) theory support and enhance learner-centered instruction and assessment in Adult Basic Education (ABE), Adult Secondary Education (ASE), and English for Speakers of Other Languages (ESOL)?
- What existing MI-based applications are most useful and appropriate to learner-centered classrooms for adult learners?
- What kinds of MI-based processes and tools can and should be developed for assessment and instruction appropriate to adult learners?
- Do particular entry points (i.e., assessment, curriculum development, instructional strategies) into MI theory make the most sense in particular contexts (ABE, ASE, ESOL)?

The research questions are open-ended, formulated in such a way as to allow unanticipated possibilities to emerge from the evidence that is collected. Conducted in six phases, there will be preparation of the teacher-researchers, participant development of model applications of MI theory, application and documentation of MI research projects, teacher institutes, site visits, observation research, indepth interviews, case studies, and visual records (video, photographs, etc.) to generate research data. Data will be compiled, analyzed, and synthesized by project staff. Using teachers as researchers assures that the work will accurately reflect the realities of adult education and the results will be useful to practitioners.

Educational Significance of the Study: This study will contribute to a theory of adult learning leading to improved instructional practices which focus on identifying and nurturing students' unique combinations of intellectual strengths and needs. Students experiencing learning difficulties probably have the most to gain from MI theory because traditional approaches have failed them. MI theory is based on "real world" applications which makes it all the more appropriate for use with an adult population. MI research and development is virtually nonexistent among ABE, ASE, and adult ESOL contexts. This study will fill this gap in the literature and will possibly serve as a model for adapting other innovative theories and practices from K–12 into adult learning and literacy classrooms. Because adult educators are integral partners in the research, the project will have an immediate and, presumably, positive impact on their practice. This approach should lead to greater reflective instructional practices among these educators.

Status of Study and Products: The study research design has been reviewed and refined. The participant interview and observation guides were revised for the second round of interviews with teachers and their students, and for observations of their instruction. Data from the first 6 months of this study were reviewed and coded into categories. These data included each teacher's monthly journals, field notes from the participant interviews and classroom observations, sample lesson plans and student writings, and teacher-researchers' analyses. A variety of technical assistance and teacher preparation activities have enabled teachers to contribute appropriately to the research effort. Preparations are underway to develop a video that will capture observations over the course of the study. The video will be edited and disseminated as a resource for adult educators wanting to implement MI theory. A *Sourcebook* that combines theory and practice through writings by the teacher-researchers, their students, and the project directors is also being developed.

The teacher-research component concludes in June 1998. However, a second phase of the project is scheduled to begin in July 1998. Here, teacher-researchers will be taught to train other teachers how to use MI in instruction and assessment. This new group of teachers will conduct more short-term inquiries using the *Sourcebook* as the central framework. This will contribute to our knowledge about the potential for scaling-up MI instructional strategies, and will help to evaluate how the *Sourcebook* can best be used to help scaling up efforts.

OERI Contact: Harold Himmelfarb, 202–219–2031

Title of Study: Literacy Practices of Adult Learners

Principal Investigator(s): Victoria Purcell-Gates, Harvard Graduate School of Education, Cambridge, MA

Program: National Educational Research and Development Centers: National Center for the Study of Adult Learning and Literacy

Funding Level: $442,747. Year 1 $35,668; Year 2 $126,250; Year 3 $121,983; Year 4 $82,172; Year 5 $76,674

Project Period: 8/01/96–7/31/01

Project Design: This study examines how adults in literacy classes use literacy skills in their everyday lives, the relationship between use of print material and literacy growth, and the types of activities that might best increase everyday literacy activity in adult learners' lives.

Data have been gathered from 300 adult literacy programs across the country. These programs have been categorized by the degree to which they emphasize literacy skills that take place outside of the classroom. On another dimension, programs were categorized by the extent to which the students helped determine the goals, activities, and procedures of the class. The study found that nearly three-quarters of current programs do not emphasize literacy skills outside the classroom and do not involve students in helping shape the goals and structure of the programs. (This finding is not surprising because it is also typical of most nonadult classrooms.) Researchers suspect that emphasizing literacy skills outside of the classroom and involving students in shaping class content will produce more effective programs future research will study whether this is true.

The next study will actually observe practices in literacy programs and attempt to see how those instructional practices affect the literacy practices of the adult learners outside of the classroom. Instruments for observing the classrooms as well as observing the home literacy practices have been developed.

Educational Significance of the Study: This study will attempt to directly relate classroom practices to the literacy practices of adult learners outside of the classroom. The ability to document the interaction between classroom practices, home factors, and literacy outcomes is very promising, and should have important implications for instructional practices and for the growing family literacy movement. Specifically, this work will help promote adult literacy programs which are explicitly designed to increase the amount and quality of literacy activities both in the classroom and in life.

Status of Study and Products: A draft of the paper categorizing programs has been submitted. Questionnaires and interview forms for the next study have been developed. Site solicitation is underway. One definite site in Boston has been chosen. Sites in Kentucky, New York, Arizona, and Haverhill, MA are being discussed. Final products will include a report on classroom and home practices and a teacher's manual for encouraging literacy practices outside the classroom.

OERI Contact: Harold Himmelfarb, 202–219–2031

Title of Study: Health and Adult Literacy and Learning

Principal Investigator: Rima Rudd, School of Public Health, Harvard University, Cambridge, MA

Program: National Educational Research and Development Centers: National Center for the Study of Adult Learning and Literacy

Funding Level: $457,091. Year 1 $71,396; Year 2 $93,438; Year 3 $110,730; Year 4 $109,369; Year 5 $72,158

Project Period: 8/01/96–7/31/01

Project Design: This project explores the mutual benefits of introducing health topics into Adult Basic Education (ABE), English for Speakers of Other Languages (ESOL), and Adult Secondary Education (ASE) classes. The work helps stress the importance of cooperation between the health and adult learning communities.

Research has shown that higher educated individuals have greater access to health services and health promotion activities than individuals with lower levels of education. Several studies present evidence that literacy itself is related to healthful activities. However, there has not been much dialogue between the health and literacy fields. While some public health reports have listed high school graduation as a national health goal, they do *not* mention ABE, ESOL, or ASE learners. Moreover, these reports note the importance of school, community, and the workplace as sites where the promotion of good health should take place; they do not mention adult learning centers. At the same time, adult educators, concerned with providing motivation for adult learners, point to the importance of using curricula based on content of interest to learners as a vehicle for improving basic skills. Educators are finding that health topics often provide that content.

The literature in this field will be reviewed, followed by case studies of a large sample of programs. The study will be guided by the following questions:

- What are the effects of including health topics compared to other topics in adult literacy instruction?
- How does inclusion of health-related content help adults improve basic skills?
- What changes in health-related perceptions or behaviors result from the inclusion of health related activities in adult basic skills programs?

The Center will also support several exploratory studies of efforts to link health communication programs and adult learning centers. These efforts will be organized by the Harvard School of Public Health and will take place during all 5 years of the Center's grant. Interviews with adult learners will explore social networks, (e.g., family, school, work groups, churches) that might affect learner motivation and participation in adult literacy programs. Adult learner perceptions of barriers and facilitating factors related to health communication and access to health promotion, disease prevention, and curative services programs will be obtained from 7 to 10 focus groups to be conducted in Year 3. Findings from these inquiries will be presented to public health and adult learning experts, including panels of practitioners and adult learners, to identify potential strategies and

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needed changes. A consensus report on barriers and facilitating factors will be developed, circulated for comment, and completed in Year 4. Finally, the project will form an Adult Learning and Health Task Force to examine existing innovative programs linking adult learning and health promotion efforts. A model program will be developed based on the perspectives and insights from practitioners in both fields and will be disseminated widely through electronic media, journal publications and appropriate professional presentations.

Educational Significance of the Study: A major problem in adult education is motivating learners and increasing the impact of adult literacy programs. Past research has demonstrated that a potential solution to such a problem is to teach literacy skills within the context of learning about something that is very important to the adult learner. To date, when adult education programs attempted to provide such a focus, they concentrated on subjects related to the world of work. The researchers in this project believe that health context for teaching literacy skills about areas that matter to the learner. Also, such an approach will provide the added benefit of providing healthier habits by the learners. Moreover, to public health officials, it has become increasingly clear that low literacy has a major impact on their efforts to improve preventive health behavior and the treatment of illnesses in the population at-large. In short, this project will be of mutual benefit to both the adult literacy and public health fields.

Status of Study and Products: The *Health and Literacy* graduate seminar was developed and taught in the Harvard School of Public Health last Spring. Interviews with 106 adult learners were completed in May 1997. These interviews served as a pilot for a learner inquiry instrument. Analysis of these data to date do not show much awareness by these adult learners of barriers about health issues or “healthy” behaviors. However, two-thirds of the participants note that they have problems filling out medical forms. These data are undergoing further analysis.

A survey of adult educators was piloted in Massachusetts last summer. Thirty-one adult educators responded. The pilot served to refine an instrument for a mail survey planned for early Winter 1998. Overall, participating educators report positive experiences in terms of their own teaching, their academic goals for the class, and student reactions. Furthermore, compared to other subject areas, the health project strongly contributed to learner participation, interest, and motivation. A national study with teachers will be undertaken this year, and smaller focused studies with adult learners will continue.

The study will produce the following reports: a report of the findings from interviews with adult learners about health communication issues; a report of findings from interviews with adult educators in Massachusetts about integrating health and literacy; a best practices report integrating health literacy based on case studies and teachers’ assessments; a consensus report on which factors help and which hinder the integration of health and literacy issues; and a report on the implementation of a model health literacy course for adult learners.

OERI Contact: Harold Himmelfarb, 202–219–2031

Title of Study: Staff Development

Principal Investigator: Cristine Smith, World Education, Inc., Boston, MA

Program: National Educational Research and Development Centers: National Center for the Study of Adult Learning and Literacy

Funding Level: $751,089. Year 1 $153,271; Year 2 $258,759; Year 3 $192,179; Year 4 $146,880

Project Period: 8/01/96–7/31/01

Project Design: This study will attempt to answer the following questions. What are the outcomes for practitioners and programs (and, indirectly, learners) of different approaches for developing staff who teach Adult Basic Education (ABE), and how do characteristics of individual practitioners, programs, and the broader ABE and staff development systems influence those outcomes? The three approaches to staff development being investigated in this study include workshops; peer coaching; and practitioner research. The sample will include 120 practitioners (40 from each of 3 states—Connecticut, Massachusetts, and Maine), with 36 practitioners and programs being selected for indepth data collection. The staff development under study will focus on learner motivation and persistence.

The project plans to collect information about change in the areas of practitioners' *thinking (concept development and beliefs) and practice* (the process of planning and implementing new behaviors). Changes in how practitioners think about their own work (i.e., their ability to question and understand why they do what they do) are a key outcome that crosses both areas.

Educational Significance of the Study: The field of adult literacy is filled with part-time teachers who are not trained as adult educators. Effective staff development strategies are critical to increasing the success of instruction for adult learners. The three staff development strategies to be studied here are the most common ones being used today. No comparative assessment of the efficacy of these strategies has ever taken place. Therefore, this study should have direct applicability to help improve staff development practices for adult educators throughout the country.

Status of Study and Products: A comprehensive review of the literature in this area and in K–12 staff development is nearing completion. Negotiations on which sites to study are underway. Survey instruments and sampling designs are being developed. Implementation of the staff development interventions are expected to begin in the Summer of 1998. A second wave of data collection will be completed in the Fall of 1999. Final data collection will occur in early Summer 2000. A full research report and staff development manuals will be products of the study.

OERI Contact: Harold Himmelfarb, 202–219–2031

Title of Study: GED Impact

Principal Investigators: Richard Mumane, John Willit and John Tyler, Harvard Graduate School of Education, Cambridge, MA

Program: National Educational Research and Development Centers: National Center for the Study of Adult Learning and Literacy

Funding Level: $361,501. Year 1 $104,110; Year 2 $77,967; Year 3 $91,408; Year 4 $88,016

Project Period: 8/1/96–7/31/00

Project Design: This study investigates the economic benefits for school dropouts in obtaining a General Educational Development (GED) credential. The types of questions that guide this work include:

- Does the acquisition of the GED improve labor market outcomes for school dropouts, and is the answer to this question different for different types of dropouts (for example, males versus females or minority group members versus whites)?
- Among dropouts who attempt to obtain a GED but do not succeed, which of the five GED examinations pose the greatest obstacles, and is the answer different for different types of dropouts?
- How important are differences in passing score requirements among states in determining which dropouts obtain the GED credential?

These questions will be answered in two distinct projects.

In the first project, data from a large sample of school dropouts in New York, Florida, and Connecticut between 1984 and 1990, and a large sample of dropouts from across the nation who attempted the GED test battery in 1990, will be merged with data from the Social Security Administration (SSA) records on the employment and earnings of individuals from the time they entered the labor force through 1995. This will result in a unique data set that can be used to study the labor market benefits of GED acquisition. This study also will take into account variations among state standards for passing the GED tests that otherwise would bias the interpretation of its findings.

In the second project, individual level GED data will be used to determine the likelihood that dropouts with particular characteristics will pass the GED battery of examinations and whether certain subject areas in the battery of tests pose the greatest difficulty.

Educational Significance of the Study: As median earnings for high school dropouts have plummeted, more and more individuals have become interested in acquiring a GED. This interest stems in part from the absolute size of the GED program and the considerable state and federal government resources devoted to GED preparation programs. The GED credential has become the primary "second chance" route to high school completion certification for dropouts in the United States. Past studies of the relationship between the GED and earnings have been limited. They were unable to separate the skills demonstrated by GED holders from their impact of the motivation they demonstrated by preparing for and passing the examination. This study is unique in that it addresses this issue head on. The study uses unique data from the Social Security Administration and takes into account the fact that states vary in the score they require for students to pass the GED exam. This approach allows the researchers to better isolate the impact of higher skills on future earnings. The study will determine if the payoff for a GED holder occurs when the certification is used to gain access to postsecondary education and training, and if such certification accurately signals to employers about which school dropouts make productive employees. This study will also inform decisions about where resources and energy should be concentrated in GED preparation programs. It will identify the most problematic hurdles for dropouts who attempt to earn a GED. The results will indicate the types of skills dropouts lack upon school leaving. The project will also address policy questions surrounding the effects on passing rates of different state and GED Testing Service mandated passing standards.

Status of Study and Products: All of the data for the first project were received in February 1997. Several papers devoted to the research questions are in various stages of completion. A draft of the initial paper, "Estimating the Impact of the GED on the Earnings of Young Dropouts Using a Series of Natural Experiments," was completed in July 1997. Following vigorous review of prior drafts, the final draft of the paper is currently underway. The paper shows that GED certification increases the earnings of young white dropouts by 15–19 percent, but does not significantly increase the earnings of young nonwhite dropouts. Work on a second paper, which will look at the returns and changes in the returns to the math skills of dropouts, is underway and is expected to be completed in January 1998. A third paper, which examines the different standards for passing the GED and their impact on different dropout groups, began in December 1997. The project will also be adding three studies that will use the National Longitudinal Study of Youth database to explore whether acquisition of a GED improves labor market outcomes for men and women, and the mechanisms through which the gains occur.

As research is conducted on the first project, agreements are being finalized with the states and the GED Testing Service for use of their data in addressing the second project. That research will begin during Spring 1998 and initial results will be presented at the July 1998 meetings of the National Bureau of Economic Research Summer Labor Institute. Further analysis will occur in the last half of 1998, and results will be available in 1999.

OERI Contact: Harold Himmelfarb, 202–219–2031

Title of Study: Assessment

Principal Investigators: Beth Bingman, Brenda Bell, and Hal Beder, University of Tennessee, Knoxville, TN, and Rutgers University, New Brunswick, NJ

Program: National Educational Research and Development Centers: National Center for the Study of Adult Learning and Literacy

Funding Level: $828,594. Year 1 $193,852; Year 2 $198,727; Year 3 $194,182; Year 4 $118,239; Year 5 $123,594

Project Period: 8/01/96–7/31/01

Project Design: This project is examining how participation in adult learning and literacy programs affects adults' lives and their communities. The study is also examining ways to assess these impacts. The work will be organized under five research studies. *First,* two policy papers will examine existing studies of the impacts of such participation and ways of measuring results. The purpose of this initial work will be to draw preliminary implications for literacy policy and practice and to make recommendations regarding the designs and methodologies of future studies and systems. *Second,* the impacts identified by learners will be explored by analyzing data from an earlier longitudinal study conducted in Tennessee and through follow-up interviews with participants in this earlier study. Based on the follow-up interviews, a more nationally representative study will be designed and conducted. *Third,* a study will identify teaching and learning models used in Adult Basic Education (ABE), English as a Second Language (ESL), and Adult Secondary Education (ASE) programs in order to be able to develop useful methods of measuring learning gains for each, and to provide a much needed research-based understanding of how teachers and students interact in adult literacy classrooms. *Fourth,* measures of the impact on the quality of life of adult learners will be developed. This portion of the study has reviewed the literature in other disciplines on quality of life measures. Now it will focus on the Knox County Literacy Program, which is using the National Institute for Literacy's "Equipped for the Future (EFF)" standards framework, and will design a model assessing the impact of this program based on those standards. This model will then be tested in two other EFF sites in Year 3. *Fifth* a study of the impact of new legislation at state and federal levels on the conduct of adult literacy programs will be undertaken.

Educational Significance of the Study: One of the major issues in adult literacy education relates to measuring and demonstrating impact. Adult literacy educators have argued that the impact of their programs is often indirect (e.g., providing enough basic skills and motivation to pursue higher skill careers and further education at some later point in life). Also, the impacts are often related to aspects of adult life that are not directly related to basic skills (e.g., self-esteem, parenting skills and community participation). Such outcomes are difficult to measure and document. This set of studies will go a long way in helping researchers and local program administrators document such outcomes.

Status of Study and Products: (1) One of the two policy papers, *Performance Accountability: Building Capacity to Perform and to Count,* is undergoing a second draft after review by the project advisory board. This should be ready for publication in January 1998. The literature review for the policy paper on outcomes and impact studies has been completed and half of the report has been written. (2) The follow-up interviews with participants in the earlier Tennessee longitudinal study for the Learner Identified Impacts project are near completion. Analysis of the interview data will be complete by mid-1998. The statistical analysis of the Tennessee data should be completed by the end of this year. (3) The "Quality of Life Measures" for the study identifying measures of impact on the quality of life of adult learners are being refined upon advice of the project oversight group. (4) Staff of The Teaching and Learning Typologies study are in the process of selecting sites for classroom observation. Sites are being selected on the Eastern seaboard, in Tennessee, and in California.

OERI Contact: Harold Himmelfarb, 202–219–2031

Title of Study: Longitudinal Study of Adult Literacy (LSAL)

Principal Investigator(s): Steve Reder, Portland State University, Portland, OR

Program: National Educational Research and Development Centers: National Center for the Study of Adult Learning and Literacy (NCSALL)

Funding Level: $1,698,637. Year 1 $98,474; Year 2 $140,723; Year 3 $381,262; Year 4 $561,430; Year 5 $516,758

Project Period: 8/01/96–7/31/01

Project Design: The study is designed to provide evidence about adult literacy gains as a result of participation in formal instructional programs and nonformal learning activities. It also investigates the impact of those literacy gains on social and economic outcomes. The study will collect nationally representative data about adult literacy over time. An on-going local study in the Portland area will be conducted to pilot methodology for the national study and to gather some qualitative data that could inform the findings of the national study.

Educational Significance of the Study: Past research has demonstrated that adult learners do not persist in particular programs. An individual may spend some time on one program, drop out, and then start another program, and so on. For any individual learner, the short time spent in a given program may often be part of a larger set of program participation activity. In order to accurately assess the impact of participation in adult literacy programs, it is necessary to have information about an individual's participation in *all* programs, not simply the segment they happen to be enrolled in at any particular point in time. This can be done only through a longterm study where participants are studied over time. In addition, it is important to assess the indirect impacts that such programs have on aspects of learners' lives other than direct literacy gains (such as pursuit of further education, employment, earnings, parenting, community participation, and more). Once again, these assessments can only be made properly by following program participants over time. Understanding the nature of both program participation and impacts *over time* will help both researchers and practitioners develop truer insights into the needs of adult learners and the opportunities to meet those needs.

Status of Study and Products: An initial design options paper has been produced and has been reviewed by technical experts, other NCSALL staff, and other U.S. Department of Education staff. In addition, feedback has been received from postings on appropriate world wide web listserves. The options paper is being updated and two professional advisory boards for the project are being established. One board will be made up of adult literacy and lifelong learning experts, and the other made up of technical experts in aren, instrumentation, assessment, and sampling. The advisory boards will meet early in 1998. The local Portland study will begin data collection by the Summer of 1998.

OERI Contact: Harold Himmelfarb, 202–219–2031

Field-Initiated Studies (FIS)

Title of Study: GED's and Earnings, What are the Costs and Benefits?

Principal Investigator(s): Duncan Chaplin, The Urban Institute, Washington, DC

Program: Field-Initiated Studies (FIS)

Funding Level: Year 1 $95,162

Project Period: 10/1/97–9/30/98

Project Design: This research will attempt to answer two questions:

- Are teenagers encouraged to drop out of school when they see older youth earning General Education Development certificates (GED's)?
- How does the GED relate to the development of human capital—that is, does the GED show employers that GED recipients have mastered higher levels of basic skills than other high school dropouts, and does the existence of the GED provide an incentive for dropouts to improve their skills?

To answer the first question the investigator will analyze the association of teenage GED rates with dropout rates by state, calendar year, and age. The analysis will cover the years 1990–96 and ages 16–18. The GED Testing Service has provided the data for years 1990–97, and the dropout rates will be calculated based on the October data.

To examine the relationship between the GED and the development of human capital, the researcher will examine data from the National Education Longitudinal Study (NELS). To look at how employers view the GED, the investigator will compare 12th-grade academic test scores of individuals with GEDs to those of other dropouts, after controlling for factors such as race, gender, and completed years of high school. He will also compare the 1990 and 1992 academic test scores of pre-1990 dropouts who do and do not obtain GEDs.

Educational Significance of the Study: GED rules and policies vary over time and across states. For example, in 1989 over 10 percent of GED test takers in the United States were under 18. By 1996 this number had risen to 13 percent. It seems that the number of teenagers being given the GED option is increasing. On the other hand, in 1996, 11 states gave less than 0.1 percent of their GED credentials to youth under 18. Clearly, several states are far below the national average with respect to this option.

This study will provide information to policymakers at the state level who are making important rules about GEDs. For example, if the study finds that changes in teenage GED recipiency rates appear to be strongly related to dropout rates, this would suggest that states should exercise great caution when relaxing GED program rules to allow more teenagers to acquire the credential. Second, if the GED credentials act as a very effective signal of human capital, even after controlling for a large number of factors that an employer is likely to see, this would suggest that the GED can play an important role in helping employers decide who should be hired for different jobs. Finally, the study may provide evidence that studying for and obtaining a GED may actually help to off-set losses in human capital caused by dropping out of high school.

Status of Study and Products: During the first 4 months, the researchers have been collecting data on the GED program rules and recipiency rates and building the data sets. By the end of February descriptive statistics will be produced and used to develop a preliminary report on the educational characteristics of youth. By May of 1998 the investigator will submit the draft of the models. The final report is due at the end of September 1998. The final report will include recommendations for policymakers setting the rules and regulations for earning a GED in their particular jurisdictions.

OERI Contact: Nevzer Stacey, 202–219–1324

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Title of Study: Making the Transition: Work Experiences After High School

Principal Investigator(s): Barbara Schneider, National Opinion Research Center, Chicago, IL

Program: Field-Initiated Studies (FIS)

Funding Level: $440,208. Year 1 $134,641; Year 2 $169,477; Year 3 $136,030

Project Period: 10/1/97–9/30/00

Project Design: This study is designed to examine the employment and schooling experiences of young adults after completing high school. The study compares the experiences of young adults in three different circumstances: those working while in 4-year colleges, those working while in community college, and those working full-time. The research focuses on the type of work in which young people are engaged, taking into account whether they are in or out of school, and what impact these work experiences are having on their future educational and career expectations, as well as their knowledge and skills. It also investigates how work relates to the socialization skills and developmental needs of young adults.

The data base for this study draws upon three sources: the student sample from the Alfred P. Sloan Foundation longitudinal study, "Youth and Social Development," the third follow-Up of the National Education Longitudinal Study of 1988 (NELS 88-94), and original field-based observations and interviews of 200 Sloan respondents at their work sites. A combination of qualitative and quantitative analyses will be used to answer several questions, including:

- How does the nature of work vary by industry categories?
- Which jobs have the most autonomy, flexibility, cognitive challenge, cooperation, and intrinsic and extrinsic rewards?
- How do job experiences (i.e., degree of autonomy, flexibility, cognitive challenge, and cooperation) vary by schooling status and demographic characteristics?
- What is the relationship between the nature of the job and future occupational choice, self-esteem, and persistence in school?
- Which jobs lead to further schooling, higher self-esteem, and career clarity, taking into account individual characteristics (e.g., schooling completed and parents' socioeconomic status)?

Because the Sloan sample has been followed since sixth grade, there is a wealth of information in the data base regarding the respondents' backgrounds and career aspirations. The current data collection will add rich information about the nature of these individuals' jobs and their social relationships within those jobs. The NELS data will allow a comparison of the work experiences of young people in the 1980s with those of young people in the 1990s using a large nationally representative sample.

Educational Significance of the Study: The current literature about first jobs focuses on the earnings and advancement aspects of these employment opportunities. This study, however, will explore other characteristics of these jobs, (e.g., autonomy, flexibility, job challenge, skill development, and cooperation among employees). The findings of this study will provide guidance to help secondary and postsecondary institutions better prepare their students for the world of work—both in terms of the programs they offer and in terms of the advice they provide students. Furthermore, the longitudinal nature of the data, coupled with the on-site observations at the workplace will lend a depth of analysis that has not been available previously. The study will be able to test the impact of different school/work combinations on long-term career choices and future educational choices.

Status of Study and Products: This study has just begun. The sample of workers is being selected currently. The following products are expected:

- A Year 1 report will detail the work generating the sample of students, a description of their current educational and employment status, and student willingness to participate in the study in Years 2 and 3. During Year 1, an *issue* brief will be produced and disseminated describing the importance of the issue that is being studied, what is known about it from previous research, and how this study will fill some gaps in existing knowledge.

- A Year 2 report will describe the experiences of young adults in the sample. A *research* brief that describes the questions in the study and summarizes the results of the field work and quantitative analyses to date will be produced and disseminated, along with at least three papers on the following topics: Working While in College; The Lives of Young Adults In and Out of Community College; and Life After High School: The Continuation of Teenage Work.

- At the end of Year 3, a comprehensive final report will be submitted that will detail the background and purposes of the study, the results of Year 2 field work and interviews of students, and the implications of the findings. A *policy* brief for legislators and practitioners will be written and widely disseminated. In addition, the project will create a home page on The University of Chicago web site that will contain copies of all materials and articles, conference papers, and briefs produced for the study. At least two articles will be produced for refereed scholarly journals, and a scholarly monograph based on the data analyses will be published. The project will support and train three graduate students in the conduct of educational research.

OERI Contact: Harold Himmelfarb, 202–219–2031

Title of Study: High School Courses, College Admissions and Affirmative Action

Principal Investigator(s): Duncan Chaplin , The Urban Institute, Washington, DC

Program: Field-Initiated Studies (FIS)

Funding Level: $104,365

Project Period: 10/1/97–9/30/98

Project Design: This study will attempt to answer two questions:

- Are African-American students placed in high school courses that are either too easy or too difficult for them? and

- How do colleges consider course-taking behavior when making admission decisions, especially with regards to African Americans?

The principal investigator will develop a statistical model to estimate the overall effects of high school course taking on college admission. The model will include both policy variables—course-taking behavior, and controls such as precourse test scores, individual characteristics (race, age, disability status), parental characteristics (education and income), high school characteristics (percent free lunch), and participation in extra-curricular activities. Outcomes at the first level will be high school grades and SAT scores. The second level outcome variable will be the selectivity of the college where the student is admitted.

The research will use data from both High School and Beyond (HS&B) and the National Education Longitudinal Study (NELS) to estimate how the associations between course-taking, grades and college admission have changed over time. The HS&B data provide information on these associations in the early 1980s while NELS data provide information for a more recent cohort of youth, information on courses taken before 10th grade, and an additional set of test scores taken before 11th grade. College selectivity will be measured by the average SAT scores of all students who attend the institution.

Educational Significance of the Study: Increasingly, legal challenges are being mounted concerning affirmative action policies in higher education. The goal of the study is to help inform debates surrounding such issues. Specifically, the work will suggest alternative high school programs that might better prepare minority students, especially African-Americans, for postsecondary education.

Status of Study and Products: During the first 2 months, the principal investigator will build the data set and carry out a literature review. During the third month, descriptive statistics will be produced and used to develop a preliminary report describing course-taking. During the 4th through the 7th months the statistical models will be developed and run and the most intensive part of the analysis will be conducted. The report of the analysis will be set out for peer review during the 9th month. In the 10th month, additional analysis will be done and the final report documenting the analysis and findings will be written by the end of the 12th month.

OERI Contact: Nevzer Stacey, 202–219–1324

Title of Study: Assessment of Multicultural/Diversity Outcomes

Principal Investigator(s): Jerry Long and Anthony Ambrosio, Emporia State University, KS

Program: Field-Initiated Studies (FIS)

Funding Level: $342,633. Year 1 $105,745; Year 2 $116,410; Year 3 $120,478

Project Period: 12/31/97–12/30/00

Project Design: The purpose of this study is to assess the effectiveness of Emporia State University's (ESU) multicultural and diversity programs. The study focuses on several specific research questions:

- Do multicultural/diversity education programs help faculty better understand and respond to the needs of culturally diverse students?
- Do students graduate with knowledge in academic areas (such as history, political science, sociology, and psychology) and with a knowledge of human growth and development that prepares them to interact effectively with diverse populations?
- Does the general education program change the attitudes that entering freshmen have about minority groups and diverse populations?
- Are teachers being adequately trained to work with diverse populations?

The project will administer a pretest to all entering freshmen at Emporia State University. The general student body will be further assessed in their senior year. In addition, prospective teachers will be assessed when they enter the Teacher Education Program during their junior year and, again, after student teaching. Testing will include an attitude inventory, content knowledge test, and portfolio assessment. Three instruments to be used to conduct this study were developed and field tested by ESU faculty prior to the award of this grant. An additional instrument to measure knowledge about multicultural education and diversity will be developed under this grant.

Educational Significance of the Study: This project will develop an assessment tool to evaluate the effectiveness of programs on multiculturalism and diversity offered at universities. Because of the rapid rate at which cultural diversity is increasing in the United States, preservice teacher education programs must prepare teachers to work successfully in a multicultural environment. This assessment tool will be useful to help university administrators determine whether multicultural and diversity programs help teachers become better prepared to meet the needs of an increasingly diverse student body.

Status of Study and Products: The project starts on December 31, 1997. The study will develop assessment tools to evaluate the effectiveness of a program on multiculturalism and diversity at ESU offered in both the general education program and the Teacher Education Program. The results of this research will be made available to other universities, and will lead to a series of publications and national presentations.

OERI Contact: Delores Monroe, 202–219–2229

Title of Study: Community Colleges as Primary Postsecondary Career Educators of Disabled Adults

Principal Investigator(s): Mary Moriarty, Springfield Technical Community College,
Springfield, MA 01105

Program: Field-Initiated Studies (FIS)

Funding Level: $679,717. Year1 $227,809; Year 2 $228,425; Year 3 $223,483

Project Period: 9/1/96–8/31/99

Project Design: Through the Americans with Disabilities Act of 1990, the United States Congress strengthened the rights of disabled persons to attend college and participate fully in the workforce. This project is designed to improve the educational and career services delivered to disabled adult students in postsecondary institutions. This project will develop and evaluate a model of cost-effective delivery of postsecondary career development services to disabled adults. It will focus on approaches that promote career development, learning, job placement, and successful adjustment to work for these individuals. The study will quantify the outcomes and costs and benefits of various approaches. The principal outcomes for study are successful career training and job placement for disabled adults.

Specifically, this study will examine how early clarification of career goals and the types of services disabled adults receive in postsecondary career education programs (such as career planning and academic support) affect the persistence and graduation rates of these individuals. This study will also examine how structured, career-relevant work experience for these individuals relates to their subsequent job placement rates. In addition, the study will examine how faculty can be better prepared to increase the percentage of disabled students they refer to employers for jobs when such referrals are solicited.

A combination of survey approaches will be used to collect data. First, a student profile for 60 participants each year will be established. This will include information on their academic standing, their needs for special services and their career aspirations. A cohort of 60 nondisabled students will be randomly selected as a control group and will constitute a 'typical' population of community college adult learners.

Baseline information will also be collected from faculty participating in the project. This will cover their current level of "comfort" in dealing with disabled students and their beliefs or attitudes concerning the career education and job referral of disabled students. Faculty will be anonymously surveyed within the first month of the project, prior to involvement in staff development activities, to determine the prestudy "climate" of faculty attitudes toward disabled students.

Educational Significance of the Study: This study will add significantly to the scarce body of research about which academic and support services most effectively contribute to the successful career development of disabled college students. Findings from this study will help colleges to better use their resources (including faculty) to educate disabled students, and to implement successful career development activities for disabled adults. Specifically, the project will show how America's 1,000 community colleges can help prepare close to 150,000 disabled adults become full participants in America's workforce.

Status of Study and Products: The grantee has developed and delivered the "Faculty Guide to Working with Students with Disabilities." This provides extensive guidance on effective strategies for teaching students with a variety of disabilities. The guide's effectiveness will be evaluated through follow-up surveys of users. They have also produced a video, "ACCESSing Ability." This production was recently awarded the First Place Award in the "Best Instructional Video" competition sponsored by the Community College Association for Instruction and Technology. Participants in the study are receiving career counseling from faculty. Program staff are meeting with local employers to inform them about the Americans with Disabilities Act and to find placements for students seeking real life work experiences. The final products from this study will include descriptions of methods community colleges can use to assure that disabled adults graduate from career associate degree programs and become gainfully employed. These final products will add significantly to the scarce body of research about which academic and support services contribute most effectively to the successful career development of disabled college students.

OERI Contact: Norman Brandt, 202–219–1662

Title of Study: The Development and Assessment of Complex Problem Solving in College Students

Principal Investigator(s): Karen Strohm Kitchener, University of Denver, Denver, CO

Program: Field-Initiated Studies (FIS)

Funding Level: $433,786. Year 1 $186,985; Year 2 $155,363; Year 3 $91,438

Period of Study: 10/1/97–9/30/00

Project Design: One of the most important responsibilities that educators have is helping students learn to use reason to solve complex, real world problems. This project addresses that issue in two ways. First, it will investigate how academic and nonacademic experiences help different groups of students develop the ability to reason in a sophisticated manner. Second, it will further refine an objective measure of complex problem solving that can be used to assess student outcomes as well as instructional practices. Male and female, Euro-American and African-American students from four different colleges or universities will be tested during this 2-year longitudinal study. Students will be interviewed and assessed using a paper and pencil test about the assumptions they use when solving complex, real world problems. The data will be used to write a technical manual for the assessment measure so that it can be used by other institutions.

The project will help us understand the kinds of institutional practices that improve or impede the development of complex problem solving skills for different kinds of students. Practically, it will help identify ways that universities and colleges can intervene with students to improve problem solving. The study will also help refine a measure that can be used by institutions to assess whether specific experiences are aiding or hindering the development of these abilities.

Educational Significance of the Study: Educators often stress that a primary goal of education is to assure that students develop problem solving skills. Several national proposals for educational reform have focused on the importance of teaching college students to weigh often conflicting evidence to make informed, reasoned judgments about the complex issues they will face as adults. In fact, the importance of developing and assessing problem solving abilities like these is the first priority mentioned in the U.S. Department of Education's Research Priorities Plan.

Prior research has found that a college students' academic performance is related to the student's perception of the value of a college education and to participation in student activities. More specific questions remain, however, about what college experiences provide the environmental support and day-to-day opportunities for practicing the skills associated with more complex levels of reflective thinking for male and female, African-American and Euro-American students. Classroom experiences are only one potential influence. This project will lead to a broader understanding of both curricular and college-wide experiences on the development of sophisticated reasoning skills.

Status of Study and Products: This study has just begun. After students have been interviewed and assessed about the assumptions they use when solving complex problems, the data will be used to write a technical manual for developing and using an assessment tool for measuring postsecondary students' abilities to solve complex problems. This manual will allow other institutions to develop and use similar tools to assess the abilities of their students. By understanding the kinds of institutional practices that improve or impede the development of complex problem solving skills for different kinds of students, this study will also identify ways that universities and colleges can most effectively intervene with students to improve their problem solving abilities.

OERI Contact: Norman Brandt, 202–219–1662

Title of Study: Enhancing Faculty Contributions to Learning Productivity

Principal Investigator(s): Carol Colbeck and James Fairweather, Center for the Study of Higher Education, Pennsylvania State University, University Park, PA and Michigan State University, East Lansing, MI

Program: Field-Initiated Studies (FIS)

Funding Level: $720,694. Year 1 $242,890; Year 2 $245,655; Year 3 $232,149

Project Period: 9/1/96–8/31/99

Project Design: This project has two research objectives: (1) to investigate how state policies, institutional practices, and the cultures of academic disciplines work together to shape departments of postsecondary institutions to produce learning, and (2) to investigate how faculty members' motivation and opportunities to contribute to undergraduate learning are helped or hindered by the contexts in which they work. This study focuses on four specific research questions:

- What instructional methods do faculty use in their classroom teaching?
- Which methods are most productive?
- Who are the most productive faculty members?
- Why are they most productive?

This project integrates quantitative analyses of the 1993 National Survey of Postsecondary Faculty (NSOPF 93) with case studies of the contexts for faculty work and student learning. Analyses of NSOPF 93 examine the influence of a number of factors on faculty teaching and research productivity. These factors include how work is allocated, how beginning faculty are socialized, as well as individual motivation, rewards, and institutional and departmental climate. Research productivity is examined because of its potential impact (positive or negative) on instructional productivity. The nine case studies include three institutions in each of three states that have differing policy environments for faculty work. Ohio offers an example of a "regulatory" environment where faculty must now report their work activities to the state and substantive measures have been enacted to regulate faculty work. In the "monitoring" environment in Texas, faculty must only report their work activities to the state. In the more "open" Tennessee environment, state policies place more emphasis on outcomes assessment than on faculty work, and any monitoring of faculty work is done at the campus rather than at the state level.

In each state, case studies are being conducted at the premier public research universis level university, and a private liberal arts college. On each campus, the research team is interviewing administrators concerned with undergraduate education and students, faculty, chairs, and deans from four departments selected for disciplinary variation: English, Physics, Business Management, and Mechanical Engineering. Interviews elicit information about teaching methods, perceptions of ways that faculty efforts contribute to student learning, and perceptions of how university, disciplinary, and state policy contexts enable or constrain the production of learning. Replication of the NSOPF 93 in the case study departments will allow the research team to study them in relation to the national sample. Analyses of the case studies will define learning outcomes in each department, and map backwards to faculty beliefs and practices, to elements of work contexts that influence learning productivity. Cross-case analyses across disciplines, institutions, and states will permit comparisons of conditions that promote learning.

Educational Significance of the Study: The goal of the study is to identify policies and practices at the state, institution, and department levels that will help faculty teach better. Currently, most state policies regarding faculty effort focus on teaching processes rather than on faculty contributions to student learning. For example, legislative efforts often focus on increasing faculty time in the classroom. But even if faculty increase time spent in the classroom, if they continue to use ineffective teaching methods, then the increased time spent teaching may not result in increased student learning. Several higher education administrators and policymakers have suggested that improving productivity in postsecondary education depends means shifting attention from teaching procedures to learning effectiveness. This study provides the empirical data needed to understand how current conditions in faculty work contexts facilitate or constrain faculty efforts to enhance student learning.

Status of Study and Products: Analyses of NSOPF 93 data are complete. One of the principal investigators presented preliminary findings at the annual meeting of the Association for the Study of Higher Education in November 1997. He reported that when traditional indicators of productivity are used, relatively few faculty are highly productive at both research and teaching. Across all types of institutions, only 10.5 percent of faculty are above the norm for their disciplines in *both* research productivity (measured by numbers of publications in the last 2 years) and total instructional productivity (measured by the amount of classroom contact hours and amount of independent study hours).

The case studies are underway. Preliminary evidence from the case studies suggests that state policies designed to directly influence faculty time allocation may actually have little impaudent learning. Institutional policies that reward departments rather than individual faculty for effective teaching seem to encourage good departments to become better, but have less impact on departments where there is currently little interest in student learning. In addition, these findings indicate that discipline-specific accrediting agencies may serve as important levers for change in faculty contributions to undergraduate learning. The final products will be a report, journal articles, and presentations at association meetings based on the research. The reports and articles will contain findings from the case studies and suggestions for public policy and departmental policy about how best to use faculty time to help higher education students.

OERI Contact: Irene Harwarth, 202–219–1756

Title of Study: Case Studies in Evaluating the Benefits and Costs of Mediated Instruction and Distributed Learning

Principal Investigator(s): Dr. Frank I. Jewett, California State University, Long Beach, CA

Program: Field-Initiated Studies (FIS)

Funding Level: $403,651. Year 1 $248,611; Year 2 $155,040

Project Period: 9/1/96–8/31/98

Project Design: This project will study the costs and benefits of applications of electronic media such as interactive computer learning labs and networks, two-way live video, one-way video and two-way audio, and material delivered over the Internet. The benefits of these technologies will be measured by comparing the educational outcomes for similar courses delivered to similar students through different means (for example lecture versus two-way video). Costs will include both operating costs and capital costs.

Project staff will conduct eight case studies of these technologies at selected institutions of higher education. The case studies will be chosen to insure a variety of different types of media-based instruction that are most likely to be helpful to higher education decisionmakers. The case studies will also be used to investigate the potential of cost sharing arrangements such as consortia, and to develop a model that compares the costs of expanding campuses or higher education systems by delivering instruction using alternative means.

Educational Significance of the Study: This project will provide information to guide higher education decisionmakers regarding the expansion of various education technologies. It will provide information about both the effectiveness and the costs of these various forms of instructional delivery. This, in turn, will help higher education decisionmakers use electronic media in the wisest ways possible.

Status of Study and Products: A project Web site has been developed to inform the public of the project's development. Three of the case study reports are ready for publication and distribution. Three more are scheduled to be completed by the end of 1997, and all will be completed by February 1998. The reports will be disseminated via print and on the Web.

The cost simulation model is currently under construction. The prototype model has received extensive review both from in-house CSU staff and the project advisory committee. A one-day workshop on the model was scheduled for December 1997 and a panel presentation and discussion will occur during the National Learning Infrastructure Initiative conference in January. The benefit and costs frameworks have been presented and discussed at various national and Canadian conferences throughout the first phases of the project period.

OERI Contact: Barbara Humes, 202–219–1376

Title of Study: Improving Performance Based Assessment Strategies in Postsecondary Education: Pathways from the Classroom to Credentials via Competency Based Standards and Effective Assessment Strategies

Principal Investigator(s): Marianne Taylor and Amy Hewitt, Human Services Research Institute, Cambridge, MA and the University of Minnesota (Minneapolis), Institute on Community Integration, Minneapolis, MN

Program: Field-Initiated Studies (FIS)

Funding Level: $674,991. Year 1 $224,957; Year 2 $224,957; Year 3 $224,957

Period of Study: 9/22/97–9/21/00

Project Design: National Community Support Skill Standards (CSSS) were developed in 1996 with funding from the U.S. Department of Education to identify practice standards for direct service practitioners across several occupations (such as mental health workers, social workers, and vocational counselors). The national skill standards have been well received and are being implemented in a variety of educational and industry settings. Employers are eager to have sound assessments linked to the standards to develop a national credential for employees in these fields. The "Pathways" project will develop and field test effective assessment strategies linked to the (CSSS) and design the framework of a national certificate based on the standards and resulting assessments.

A sample of 120 learners will be selected for study from secondary and postsecondary institutions and from workforce development centers. These will be individuals who participate in human service educational courses which integrate the CSSS in Minnesota and Massachusetts. Seven educational sites, and 30 work-based field test sites will be selected for this project.

The following questions will guide the research:

- To what extent do portfolios, computer-based multiple-choice tests, and computer-based assessments focusing on solving real world problems predict actual job performance on national skill standards as measured by a supervisor?
- What are the relationships between performance after training as measured by supervisors on each of the national skill standards competency areas, and overall job performance?
- How can portfolios best be developed that relate to these standards?
- What are the implications of using new assessment approaches to develop a voluntary national credentialing process for human service practitioners?

Contributions to research include improving computer-based assessments; improving our knowledge about the usefulness of various assessment approaches for predicting competence in the workplace, and increasing our ability to integrate curricula and assessment procedures with national standards.

Educational Significance of the Study: The project builds upon national and regional recognition and support for the Community Support Skill Standards and previous demonstrations that helped guide the design of postsecondary and secondary school curricula based on the CSSS. This study will support the development of a national credential for human service practitioners that is likely to improve the quality and availability of education for human service practitioners. The project will also provide important research about the links between performance in educational environments and performance in the workplace. Traditional competence evaluations are tests of acquired knowledge. These have been shown to have little relationship weak to workplace performance. This project will examine how the use of skill standards and assessment strategies simulating practical problems may strengthen the relationship between classroom performance and competence on the job.

Status of Study and Products: Launched in September 1997, the Pathways Project is vigorously pursuing its objectives. Project staff convened the National Advisory Board early in November to introduce them to project goals and obtain guidance for this formative period. Advisors have agreed to disseminate project information and activities through various professional and industry publications. Project partners were convened separately in Minnesota and Massachusetts to orient them to project goals and time tables. Project staff are finalizing site agreements that have been crafted to ensure that partners have a full understanding of the research protocols and project requirements. Instrument design is also underway. Project Staff are working with human service educators and train-based scenarios related to the standards. Project staff are also crafting a "test blueprint" for the multiple choice instrument and locating question banks and other sources for suitable multiple choice items.

Project information will be disseminated through the Internet and direct mail to raise awareness of project activities and to solicit submission of multiple choice questions and recommendations for portfolio components. Project staff are examining computer-based educational programming to choose formats suited to the project goals and budget.

A presentation of project information was made at the National Organization of Human Service Educators National Conference in October 1997 and staff are scheduled to present at national conferences in December 1997 (The Association for People with Severe Handicaps); and May of 1998 (The American Association of Mental Retardation). The final report will include a framework for identifying components of a national credentialing program keyed to the national Community Support Skill Standards and other relevant criteria and customized for certifying human service practitioners.

OERI Contact: Irene Harwarth, 202–219–1756

Title of Study: Welfare Reform, Immigration Reform, and the Changing Workplace: The Impact on Adult Students' Learning and Achievement

Principal Investigator(s): Alexandra C. Risley Schroeder, Holyoke Community College, Holyoke, MA

Program: Field-Initiated Study (FIS)

Funding Level: $436,592. Year 1 $222,349; Year 2 $214,243

Period of Study: 10/1/97–9/30/99

Project Design: This is a collaborative research project involving two programs from Holyoke Community College (the Western Regional Support Center of the Massachusettes System for Adult Basic Education Support and the Mentor Program); the International Language Institute of Massachusettes, Inc.; the Center for New Americans; the Read/Write/Now Family Learning Center of the Springfield, Massachusettes Library and Museums; and the University of Massachusettes/Amherst's Labor/Management Workplace Education Program.

This study creates a unique partnership between research faculty, program staff, and adult students across these five diverse programs to undertake research around two questions:

- How do welfare reform, immigration reform, and the changing workplace affect adult learners' learning and achievement?
- What springboards or barriers to personal achievement are generated by these three issues?

The study will be designed to yield recommendations for adult students, adult literacy practitioners, policymakers and others regarding the relationship between Adult Basic Education and these three issues developments.

The research will include both qualitative and quantitative methods and will involve more than 240 adult students. Data will be collected through interviews, focus groups, and surveys. There will also be teacher research projects as well as research which directly involves students. The project will collect data on the reasons adult learners pursue education and their perceptions of the impact of welfare reform, immigration reform, and the changing workplace on their learning. Some information will be gathered from employers, union representatives, and practitioners. These data will focus on the perceived impact (both barriers and opportunities) of welfare reform, immigration reform, and the changing workplace on adult learners' goals and the degree to which they achieve these goals.

Educational Significance of the Study: Three major societal changes are now States—welfare reform, immigration reform, and changes in the workplace. This study will help policymakers and practitioners better understand the effects of these societal changes on education for adults. This increased understanding, in turn, will help assure that Adult Basic Education Programs are most helpful to adults who must are likely to be affected by these changes. The focus of this study was identified as critical by 14 western Adult Basic Education (ABE) programs who participated in the development of the study. This project will provide a model for ABE practitioners on how research can be used as an educational tool in an ABE classroom. This project will also help practitioners keep their programs current, in terms of welfare reform, immigration reform, and the changing workplace.

Status of Study and Products: Holyoke Community College has sponsored a press conference announcing this award. David Bartley, President of Holyoke Community College, and John Oliver, Congressman from the area discussed the importance of the study with adult learners and staff from the partner programs.

All research staff have been hired and project orientation, training, and outreach to adult learners at the five program sites has begun. Plans are underway for the first of several presentations about the project, specifically two spring presentations (one to the adult basic education community in western Massachusetts, and one at a conference on welfare reform).

The final report will cover findings of the research conducted by the project on the effects of welfare reform, immigration reform, and the changing workplace on adult learners in the area of basic education. It will include recommendations for policymakers and practitioners. The final report will be distributed to literacy programs across the nation. Findings will also be disseminated through academic, popular, and electronic media and conference presentations.

OERI Contact: Irene Harwarth, 202–219–1756

Title of Study: E-Lit: A Model Project to Examine How Community Based Institutions Can Use New Technologies to Expand Lifelong Learning

Principal Investigator(s): Cynthia Johnston, Central Piedmont Community College, Charlotte, NC

Program: Field-Initiated Studies (FIS)

Funding Level: $493,187. Year 1 $245,505; Year 2 $247,682

Project Period: 9/15/96–9/14/99

Project Design: The purpose of this study is to examine the effectiveness of using computer-based instruction in community centers (such as public libraries, community colleges, public parks and recreation sites, homeless shelters, senior citizen centers, and neighborhood housing developments) to provide basic skills instruction to adults seeking a General Education Development (GED) credential. The fundamental research question is:

- Will students who receive online computer instruction have higher retention rates, equal or greater skills gain, and complete the required course work at a faster pace than students in traditional classroom and computer labs?

This project is being conducted through a partnership with the Johnson C. Smith University, the Charlotte Housing Authority, Charlotte-Mecklenburg Schools, and TRO Learning, Inc. Phase I of the work will provide computer-based instruction in these centers, and will conduct a preliminary evaluation of the effectiveness of this instruction. Phase II will provide computers for home-based basic skills instruction throughout Mecklenburg County, and then compare retention rates and academic progress in home-based versus center-based electronic instruction.

The project will conduct pretest and posttests of the skill levels of the experimental groups and a comparison group at 12-week intervals. The comparison group will be 100 adults, ages 18 and older, who do not have high school equivalency credentials and who function at a 4th-grade reading level or above. The group will be drawn from residents of the Charlotte Housing Authority developments and the neighborhood surrounding Johnson C. Smith University. These individuals are similar to those participating in the study.

Assessment of skills will be based on data captured by the E-Lit software reporting system and the standardized pretest and posttest scores. The overall evaluation will be based on comparing retention rates, skills acquisition, and course completion rates between the comparison group and students enrolled in traditional classroom or computer lab instructions.

Educational Significance of the Study: This project is designed to be a national model that will be easily transferable to other communities that are beginning to use and apply new technologies to improve teaching methods and expand lifelong learning opportunities. Hopefully, use of this model will allow more adults to earn GEDs in a shorter period of time.

Status of Study and Products: The grantee has begun instruction and data collection activities. They have presented information about the project activities at several adult education conferences throughout North Carolina. A final report will be delivered to OERI, posted on the World Wide Web, presented at conferences, and the Central Piedmont Community College will continue to use the project model to provide basic education to adults who are seeking GEDs. The final report will include a national model for providing online computer instruction to prepare adults to pass the GED exam.

OERI Contact: Delores Monroe, 202–219–2229

Title of Study: Market-Based Adult Lifelong Learning Performance Measures for Public Libraries Serving Lower Income and Majority-Minority Markets

Principal Investigator(s): Dr. Christine M. Koontz, Florida State University, FL

Program: Field-Initiated Studies (FIS)

Funding Level: $339,839. Year 1 $139,701; Year 2 $200,138; Year 3 $$82,720

Project Period: 9/1/96–9/1/99

Project Design: This study is designed to help librarians working in low-income areas better assess and meet the needs of their clientele. Specific research questions that guide this work are:

- How can local practicing librarians better identify and meet the specific adult lifelong learning needs of the rapidly increasing minority population within their particular community?
- What library strategies, characteristics, services, and policies are most effective in meeting the adult educational needs of library users in underprivileged and minority markets?

All majority-minority markets will be identified nationwide using the Federal State Cooperative Library Database from the National Center on Education Statistics, Bureau of the Census data, and school enrollment figures. From this universe, a sample of 250 library markets will be selected for study. The sample will be stratified by geographic region, urban/rural classification, and race—Hispanic, Asian, black, American Indian, and lower income white. A nationwide survey of these library markets will be conducted in order to assess the type of library use in these areas. Performance measures for these markets will be developed to measure more accurately the types of library use that are not captured by current measures of library use. For example, current approaches focus on such measures as books checked out, but fail to capture such increasing activities as computer searches, participation in library programs, and using reference materials in the building. In addition, indepth training will be provided to five of the selected libraries, permitting their staff to conduct more detailed assessments of the lifelong educational needs of their users. The project is demonstrating how librarians can make extremely cost-effective use of new technologies (such as a software program called the Geographic Information System) to assess the education needs of library users.

Educational Significance of the Study: Public library systems are one of the most important sources of adult lifelong learning, especially in areas having a high concentration of low-income families and members of minority groups. These areas often offer fewer options for education and less access to information resources than other more affluent areas. Recent research indicates that the types of public library services actually offered and potentially needed in predominantly minority and low-income areas differ from traditional library markets. A traditional library market is comprised of individuals with higher levels of education and income, and these areas are usually majority white.

A goal of many public library systems is to provide adult lifelong learning opportunities for predominantly minority and low-income populations. The ramifications of this study for those library systems are immense. Current lifelong learning models are based on the traditional majority white market. Consequently, with today's increasingly diverse population mix, systematic studies on adult lifelong learning in a wide range of public library environments are urgently needed in order to reflect the population realities of today. The potential longterm contribution of this project is to provide a better understanding of adult lifelong learning issues, particularly for assessing learning needs of adults in low-income and majority-minority areas, and particularly for meeting these needs through the public library.

Through the survey and the indepth study of five demonstration sites, this project will develop both a standardized national baseline of the adult lifelong learning needs and wants of underprivileged populations, as well as a baseline that can be broken down by the major racial and cultural groups across America. This project will also refine library service output measures by developing and evaluating different types of service output measures that may be more useful in markets that vary from the conventional majority white socioeconomic profile, helping assure equal as well as relevant access for all library user populations.

This project will also develop a low-cost methodology that can be replicated nationwide by other libraries, using low-cost technology to better assess and serve the library service needs of their actual and potential users. It will include an instruction manual for librarians on how to use computer software systems for further analyzing and evaluating the effectiveness of their public library services to adult learners.

Status of Study and Products: To date, the project has accomplished the following: approximately 92 library systems or single libraries, representing approximately 211 library market areas are committed to the project. The geographic dispersion of the library facilities is excellent, ranging from Alaska to Florida, South Dakota to Louisiana, Oregon to Georgia. The second request was mailed for the background information survey to all participants. At present there is approximately a 65 percent return rate. When the surveys are returned by all libraries that will participate, the personal digital data collectors will be mailed out along with the how-to manuals. Data collection will commence in March. The methods and guides for data collection have been reviewed by library professionals from Chicago and DC. The second round of field visits is underway. Researchers visited Chicago, Washington DC, and Bainbridge, GA in late 1997. In January, Lumberton and Charlotte, NC, will be visited, with Denver and Dallas, and LA County and City libraries visited in February. Products will include a guidebook to help librarians use sophisticated cost-effective technology to better assess and serve the learning needs of their adult clientele. This guide will be particularly oriented toward libraries serving a low-income minority clientele.

OERI Contact: Barbara Humes, 202–219–1376

Title of Study: A Study of Adult Museum Programs

Principal Investigator(s): Bonnie Sachatello-Sawyer, Museum of the Rockies, Montana State University (MSU), Bozeman, MT

Program: Field-Initiated Studies (FIS)

Funding Level: $381,431. Year 1 $105,690; Year 2 $133,853; Year 3 $141,888

Project Period: 9/15/96–9/14/99

Project Design: The purpose of this study is to examine how museums might more effectively serve adult audiences. The study will focus on three research questions:

- From participants' perspective, what constitutes an excellent museum program for adults?
- What teaching strategies are employed in innovative and successful museum programs?
- Does the informal teaching environment of a museum offer anything unique to the adult learning experience?

The study will use ethnographic research methods to assess adult experiences in museum programs. The researchers will interview instructors and participants in a variety of settings where different teaching strategies are being used. The programs will range from the more formal museum-based approaches such as tours, lectures, classes, and adult clubs to gallery demonstrations and discussions. Expert advisors will review both the instruments used to collect the data and the procedures used to analyze the data once they are collected.

The research initially will be conducted at the Museum of the Rockies during the first year, but will be expanded to include 10 additional museums by the 3rd year. At least 35 participants and 10 instructors at each of the sites will be interviewed each year.

Educational Significance of the Study: This study will identify the attributes of innovative and successful museum programs for adults. Findings from this study can help museum administrators throughout the country improve their programs. In addition, because it focuses on how adults learn, the work can suggest ways that adult educators might improve their teaching strategies or teaching styles.

Status of Study and Products: To date, the grantee has developed and tested a series of instruments that will be used to gather data for the project. These instruments have been reviewed by such organizations as the American Association of Museums and the Association of Science-Technology Centers. These associations have agreed to publish information about this project in their newsletters. The final report will include descriptions of museum programs that provide effective training and education for adults.

OERI Contact: Delores Monroe, 202–219–2229

Small Business
Innovation Research (SBIR)

Title of Study: Instructional Authoring System Development for Networked Environments

Principal Investigator(s): J. Bala, Datamat Systems Research, Inc., McLean, VA

Program: Small Business Innovation Research (SBIR)

Funding Level: $50,000

Project Period: 9/97–3/98

Project Design: Postsecondary instruction is coming online to serve learners more flexibly and to extend access to quality education at any time and any place. To deliver instruction effectively through the Internet, educators must know both the content of the course they are teaching and how best to present the material. This is true for teaching over the Internet or teaching in the classroom. However, to make the best use of the Internet, educators must also understand how to format the material to capture the best use of the Internet technology. Currently, this means that the educators must either learn sophisticated computer languages or collaborate with someone who has those computer programming skills.

The development of an "authoring system" solves this later problem. An authoring system is a software tool. In this case, a good authoring system gives teachers ready access to the sophisticated capabilities of the Internet. With a good authoring system at their disposal, teachers can concentrate on the substance and format of what they want to teach.

Specifically, the authoring system being developed under this contract allows the content to be taught to be separated from the program that delivers the instruction. It also breaks up the entire instructional program into "templates" so the user can download material from the Web more easily and quickly than is currently the case. The templates provide a distinct advantage for courses in rapidly changing fields. The idea of these templates is based on a theory of instruction which has demonstrated that the optimal vehicle for learning lies in a *pattern* of interaction between student and computer.

Existing Internet courses have a limited capacity for interactive and adaptive instruction. The challenge of this project is to use the template idea to develop "transaction shells" that handle similar kinds of knowledge content. These shells cut the costs of courseware development dramatically. This approach illustrates the first step toward the development of a comprehensive authorizing system for courses that can improve themselves with adaptations born of feedback from students.

The project will first analyze both existing authoring systems and courses currently delivered through the Internet in order to design a new prototype authorer. To "author" a course means to create and expand (1) a subject matter knowledge base, (2) an instructional knowledge base, (3) an instructional template library, and (4) a student information database. All these bases interact to determine how to teach a particular subject to a particular student through one or more media. The objective of this project is to develop a prototype Internet multimedia authoring system with each of these four major pieces. In the course of this development, the contractor will evaluate the overall feasibility of extending the approach over a wide range of subject matter knowledge and skill levels.

Educational Significance of the Study: A successful prototype will solve an important problem regarding Internet-based course delivery. The developers will have greatly reduced the time, effort, and cost required to deliver instruction through the Internet. They can then test expanded applications of the authoring system across the full range of disciplines and for different student audiences (e.g., secondary school, adult workers, college students). A good authoring system allows college faculty, corporate trainers, and other teachers to readily deliver instruction through the Internet rather than through traditional classrooms.

Status of Study and Products: This is a very short-term project. As of the end of 1997, the contractor has reviewed selected existing authoring systems (Macromedia's Authorware Professional, AimTech's IconAuthor, Allen Communication's Quest, and Utah State University's Electronic Trainer), and is currently reviewing the Web-based courses developed by the University of Illinois and Virginia Tech. The final products include a fully tested prototype, a WebAuthor, and an assessment of the feasibility of its expanded use.

OERI Contact: Joseph G. Teresa, 202–219–2046

Title of Study: Classroom Anywhere Online: A Web-Based Training Program

Principal Investigator(s): Kathryn L. Hogan, Technical Learning Resources, Inc., Fairport, NY

Program: Small Business Innovation Research (SBIR)

Funding Level: $50,000

Project Period: 9/97–3/98

Project Design: The Chief Executive Officer of "The Education Network" (affiliated with UCLA) has stated, "Corporate America spends 50 billion dollars a year to improve employees' skills and keep up with the rapid changes in the workforce. More and more of that funding is going to go into distance learning." And increasingly, distance learning is available over the Internet.

The contractor for this work, Technical Learning Resources, Inc. (TLR), is very experienced at providing classroom training and training manuals to help students understand and use new software. Through this contract, TLR proposes to develop classes on software use to be delivered over the Internet. The target audience for these courses is novice and less experienced computer users. The TLR approach provides small, self-contained lesson modules (for better retention), avoids technical terminology, uses graphics, and offers self-contained modules which allows the learner to choose the skills they wish to learn.

At the prototype development site the contractor will test the approach on a control group of first time and inexperienced computer users. Based on this group's responses, the prototype will be refined, and tried out in three other sites: (1) at the Xerox corporation's Intranet system, where there are no interventions by trainers or facilitators; (2) in a classroom training setting at Blue Cross/Blue Shield; and (3) in a public library, where the objective is to determine public response and staffing requirements.

Educational Significance of the Study: The principal significance of this project lies in the comparative assessments of student response to, and retention of, the software training material in the three types of environments. Very little research exists on human-computer interaction involving both the Web and training modules designed for inexperienced computer users. The integration of this approach into existing Itranets of large organizations will also test the value of the "Classroom Anywhere Online" approach.

Status of Study and Products: This is a very short-term project. As of the end of 1997, the contractor has determined hardware requirements, has selected and developed a module for training in Word97, has designed the first prototype, and has tested it internally in a focus group setting. The coming months will see testing of the prototype at the three other sites, feedback, evaluation, and modification.

OERI Contact: Joseph G. Teresa, 202–219–2046

Title of Study: Curriculum on Demand

Principal Investigator(s): Eric J. Roberts, Management Systems and Training Technology, Co., Arlington, VA

Program: Small Business Innovation Research (SBIR)

Funding Level: $50,000

Project Period: 9/97–3/98

Project Design: Can the Web be effectively used to deliver literacy instruction to adults with limited literacy skills in their homes? At present, to use computers and the Web requires a reasonably high level of literacy to begin with. This contractor will test a model of delivery that reduces the intellectual demands on users to allow adult learners with limited literacy skills focus on intended outcomes.

The project will use the facilities and collections of courseware for homestudy by adults affiliated with the Canton Middle School in Baltimore, Maryland. (Canton is a technology demonstration site for the region.) This study tests the delivery of curriculum across the Internet for adult users. The subjects who will test the system are parents of students at the Canton Middle School. They will be selected based on both their needs for basic skills training and evidence of positive attitudes toward education and the schooling of their children. Parent-participants will keep a journal to be matched against system-generated records of access times and achievement.

Educational Significance of the Study: For some time, adult educators have been looking for ways to deliver interactive computer-based instruction, with diagnostic loops and practice paths, into the home. The work being done under this contract will overcome past complexities to provide Internet access to programs that respond to the learner, adjust and individualize levels of instruction, and enable student tracking.

Status of Study and Products: The group of parents has been assembled; learning goals have been identified; and curriculum has been selected. The installation of a key piece of hardware at the Canton Middle School is expected to be completed in January 1998.

OERI Contact: Joseph G. Teresa, 202–219–2046

Title of Study: Computer-Based Instructional System for Computer and Information Literacy

Principal Investigator(s): J. Bala, Datamat Systems Research, Inc., McLean, VA

Program: Small Business Innovation Research (SBIR)

Funding Level: $49,999

Project Period: 9/97–3/98

Project Design: It is widely recognized that computer literacy is essential to the very functioning of workplaces ranging from offices to farms to factory floors. If more than a third of the people who already use computers in their work feel that they are not computer literate, then "literacy" may not be the right word any more. Rather, the workplace now seems to be demanding computer "fluency." Ironically, the principal barrier to fluency lies in the instructional methods built into computers and software themselves. Without expensive classroom guidance in computer laboratories, the instruction currently built into machines tends to be passive, fixed, and narrow.

This contractor suggests that an alternative network-based instructional system can be constructed from a set of modules on such topics as the basics of computer operating systems. This new approach will effectively deliver skills and knowledge in a way that allows for self-pacing and interaction. By selecting among the topic modules, students can customize computer learning to their level of literacy needs. The theory informing the design of this system is "situated learning." That is, in order to master knowledge, students should acquire it in the context in which it is normally used.

The challenge to developing the software for this type of instruction lies in the interaction of subsystems. One needs systems for preview, presentation, demonstration, test, and practice. One needs to make sure that demonstration and practice share a pool of problems. One needs to structure each problem so that it, in turn, provides description, solution, hints, and feedback. A separate student record system sits in the background. This system stores results of initial student self-evaluation of computer skills and knowledge, an initial customized study plan for the student, and the results of all subsequent tests. This system will be used as the core of evaluation.

The project will develop and test a prototype for this type of instructional system. The system will include "test" questions requiring the student to demonstrate a number of skills including matching, sequencing, locating, recognizing, and identifying. The system will also cover three of the instructional processes: presentation, demonstration, and practice.

Educational Significance of the Study: If the prototype works, subsystems can be maintained as both separate and interactive, and all the instruction can be delivered on the Web. In this case, the developers will have solved an important problem in instructional software design. They can then move through a series of topics such as operating systems, the ethics of information access and use, information networks and resources, and data analysis—developing a module for each.

Status of Study and Products: This is a very short-term project. As of the end of 1997, a simulated software system had been developed and tested as an instructional tool. In the next step, the instructional delivery tool will be implemented and tested on the Web. The final product is proposed to be a fully tested prototype instructional system.

OERI Contact: Joseph G. Teresa, 202–219–2046

Title of Study: Web-Based Simulation: Consumer Mathematics Within a Functional Context for Adult Learners

Principal Investigator(s): Ilse Ortabasi, Kinder Magic Software, Encinitas, CA

Program: Small Business Innovation Research (SBIR)

Funding Level: $50,000

Project Period: 9/97–3/98

Project Design: Existing software for consumer mathematics instruction is designed principally for classroom use, cannot easily be updated, and does not provide feedback to either the learner or the software designer. A few instructional units do exist on the Internet, but they are widely scattered, with links that are excessively complex for adult learners. This project will develop and test the effectiveness of a multimedia Web site with prototype instructional modules in consumer mathematics.

The experimental design will use two groups of subjects. The experimental group will consist of students in Mira Costa College's adult basic education program. They will be pretesed and posttested using a version of traditional adult basic education tests that will be expanded to include consumer, personal finance, and other applied mathematics problems. The treatment group will receive instruction consisting of simulations requiring frequent responses. The primary electronic site for these activities, called "By the Numbers," is an image map of a home interior. Advertisements, loan forms, bank statements, serve as menu choices, each of which will be linked to a continually updated set of real-life consumer mathematics problems. A topical index will allow the student with a specific question to jump directly to the instruction (e.g., how to calculate interest on a loan). The experimental group will also evaluate the success of the intervention through a survey that can be matched to the pretest/posttest results.

Another group of subjects will be drawn from random Internet users, who will be encouraged to visit "By the Numbers," try out the same simulations, and respond to the same evaluation survey. By analyzing the background characteristics of both groups of subjects, their responses to the survey, and projecting the test results from the experimental group, the project will test hypotheses concerning likely learning gains among the larger population of adult learners.

Educational Significance of the Study: The consumer mathematics courseware being developed under this contract will be a far more flexible and efficient delivery system designed for adult learners than anything currently available. Because it will be available on the Web, it can be used where it is needed and when it is needed. This "just-in-time" approach is in keeping with the learning styles and rhythms of adult learners.

Status of Study and Products: This is a very short-term project. The experimental group recently completed their first round of instruction. By project's end, the contractor will have produced refined and packaged the software. The product will have numerous applications in the Adult Basic Education (ABE) field, and as an on demand general reference tool. The "By the Numbers" site may be subsequently licensed to all governmental and nongovernmental agencies involved in ABE.

OERI Contact: Joseph G. Teresa, 202–219–2046

Title of Study: Developing and Adapting Computer-Based Training Technologies to Provide and Enhance Workplace Competencies in Undereducated and Underemployed Workers

Principal Investigator(s): Paul David Munger, Strategic Education Services, Inc., Sterling, VA

Program: Small Business Innovation Research (SBIR)

Funding Level: $50,000

Project Period: 9/97–3/98

Project Design: Can one identify undereducated and underemployed workers in a single industry, and provide them with effective computer-based training in a wide range of language, mathematics, and computer skills? The target is the logistics industry, covering moving, warehousing and distribution firms, which traditionally employs marginally-employable workers. This industry now finds that the skills of its workforce must be upgraded to reduce inefficiencies. The study will develop a means for assessing the learning needs of warehouse employees, selecting computer-based delivery modes that are appropriate to those needs, and presenting a model of the matched needs and modes to potential service deliverers such as postsecondary institutions, trade associations, or economic development organizations. A survey of employers matching skills, language, reading, and computer requirements of the job against those held by employees will be conducted and analyzed. Potential delivery methods will be evaluated in light of their effectiveness, costs, market life, ease of use, and ease of development.

Educational Significance of the Study: Industry and occupational level based assessments of learning needs are rare. In this case, if the analysis is accurate and the potential deliverers step forward, the contractor will have demonstrated the efficacy of this approach to developing training.

Status of Study and Products: By the end of 1997, the employer survey results were being received and analyzed, six delivery methods had been evaluated, and three potential delivery organizations had been identified.

OERI Contact: Joseph G. Teresa, 202–219–2046

Title of Study: Virtual Experiential Training System for Substance Abuse Awareness

Principal Investigator(s): David A. Dryer, Dual, Inc., Arlington, VA

Program: Small Business Innovation Research (SBIR)

Funding Level: $50,000

Project Period: 9/97–3/98

Project Design: Most of the available education and training material in substance abuse awareness is severely limited because it places the student in the position of a passive observer. Even situational discussion groups, live testimonials of former drug addicts or alcoholics, movies, and so forth have limited effects because observers (students) can too easily separate themselves from the presentations. Virtual environment technology changes the possibilities for awareness training in dramatic ways. This technology forces participants to come as close as possible to firsthand involvement with the destructive effects of substance abuse.

The research will establish a baseline for developing a Virtual Experiential Training System (VETS) for substance abuse awareness. It will bring together the critical pieces for this system from medical imaging technology, substance abuse experiential scenarios, and supporting medical data, and set these against a survey of the educational content and needs of current substance abuse programs. The research is essentially a feasibility study, and is being conducted in collaboration with the Winter Park Health Foundation and the Center for Drug-Free Living, both of Florida.

Educational Significance of the Study: The effects of virtual reality education are just beginning to be seen in science education, military training, and training for space exploration. The data on virtual reality therapy suggest that the extension of the technology and principles to substance abuse awareness is worth exploring. If it works, this could dramatically increase the effectiveness of substance awareness programs. It would also demonstrate the potential of applications to other fields.

Status of Study and Products: This is a very short-term project, but its momentum comes from previous work of the principal investigator with NASA. As of the end of 1997, the project had completed its review of the educational content and needs of substance abuse programs, including meetings with educators and observations of classes. The project has also gathered data on medical effects. In the technology area, a bodily effects vest and other system hardware have been tested, and male and female models have been constructed and demonstrated to show internal and external effects of tobacco use.

OERI Contact: Joseph G. Teresa, 202–219–2046

Directed Research

Title of Study: The Mathematics Education of Teachers Project (MET)

Principal Investigator(s): Mary Lindquist, Columbus College, Columbus, GA

Institution: Mathematical Association of America (MAA), Washington, DC

Program: Directed Research

Funding Level: $228,689. Year 1 $86,021; Year 2 $142,668

Period of Study: 10/1/97–9/30/99

Project Design: This is a demonstration project which will develop a national framework for the undergraduate mathematics education of K–12 teachers. The Conference Board of the Mathematical Sciences (CBMS), the umbrella organization of the presidents of 14 national mathematical sciences organizations, will direct the development of this framework. In addition, the National Association of State Directors of Teacher Education and Certification (NASDTEC) and other groups concerned with the accreditation of teachers will be actively participating in all stages of the project. The question to be addressed is, "In what ways should the undergraduate mathematics curriculum and pedagogy be changed to maximize the mathematical preparation of K–12 teachers?"

The methodology to be used has been described by the National Research Council and the National Council of Teachers of Mathematics (1997) in the "Strategic Framework for Standards-Based Reform," a model for change and improvement that is applicable to the Mathematics Education of Teachers Project. The dimensions of this model are initial development of the framework by a team of experts representing the various aspects of the mathematics community, followed by dissemination, revision, interpretation, implementation, evaluation, and revision/redevelopment of the framework. The project will develop, build consensus around, and disseminate a document detailing standards and a framewrs of mathematics and for their initial induction period into the profession.

Educational Significance of the Study: Organizations within the mathematics community have developed standards and guidelines for the undergraduate mathematical preparation of teachers. (See "Call for Change" (MAA 1991) and "Professional Standards for Teachers of Mathematics" (NCTM 1991).) However, these standards and guidelines have never been fully developed, nor has a base of support for these standards been fully developed within the larger mathematics community. The current project seeks to build on the recommendations in these reports and to produce and disseminate a framework which provides a firm foundation for fundamental changes in the undergraduate mathematical preparation of K–12 teachers. The project will define and actively seek implementation of programs which provide prospective teachers with the mathematical knowledge, skills, and perspectives they need to prepare our nation's students to achieve at the higher levels called for by the President and the Secretary of Education.

Status of Study and Products: On December 6 and 7, 1997, members of the Education Partnership of the Conference Board of the Mathematical Sciences (CBMS) met to discuss the project and explore how the member organizations of CBMS might contribute toward its success. Each of the 14 CBMS societies agreed to appoint a committee or task force to advise and inform the Steering Committee and Writing Team, and to review drafts of the final document. The societies will also use their publications and Web sites to inform the larger mathematical sciences community about the project, seek input from mathematical scientists, and, when the recommendations are finalized, help bring them to broad public attention. Once the Steering Committee is appointed, work will move ahead quickly with initial writing sessions planned for the Summer of 1998.

The product of this project will be the framework document which will be disseminated to all collegiate mathematics and education departments across the country both in paper form and electronically.

OERI Contact: Carole Lacampagne, 202–219–2064

Title of Study: Outcomes of Diversity in Higher Education

Principal Investigator(s): Maureen Murphy, Mathtech Inc.; Falls Church, VA and Princeton, NJ

Program: Directed Research

Funding Level: $973,244. Year 1 $373,999; Year 2 $292,054; Year 3 $307,191

Period of Study: 9/30/97–9/30/00

Project Design: Increasingly, college and university campuses are becoming culturally and ethnically diverse. The purpose of this study is to examine what happens when students undertake postsecondary education in a culturally and ethnically diverse setting. Several sets of research questions guide this work:

- How do students interact and learn in a diverse student body? Do diverse classrooms and dormitories student differences? Does a diverse collegiate environment better prepare students for citizenship and the workplace?
- Does diversity offer the opportunity for students to understand and appreciate life experiences of persons different than themselves? Does diversity offer the opportunity for students to gain a richer understanding of multiple cultures and therefore multiple perspectives on family life, work ethics, political beliefs, literature, and the arts?
- Does diversity, through classroom discussion, provide an opportunity for students to more fully appreciate the influence of their own culture on learning experiences? Does it heighten awareness of cultural differences and cultural contributions?
- To what extent does diversity enhance student learning? What are the cognitive gains and how do you measure gains?
- Does diversity enhance a student's social, educational and workforce opportunities and experiences? What aspects of the academic experience and culture of a college or university contribute to the selection, retention, and graduation of students of color and influence their career paths? What are the benefits to the students, institutions, and to society and the economy?
- What state and institutional policies are most successful in improving student enrollment, retention and degree completion rates for students of color? How can such policies be translated into specific actions that can be implemented on college and university campuses?

This study focuses on a broad set of issues, including: state policies and practices affecting diversity, institutional policies and programs to promote diversity, campus culture, teaching and learning environments, and curriculum and faculty beliefs.

The study design will include both quantitative and qualitative methodologies to address the research questions outlined above. These will include surveys of officials at the state level and in postsecondary institutions, and surveys of faculty and students, as well as campus and classroom observations described in case studies. In the first year, the contractor will conduct a survey of states to examine policies and practices relating to postsecondary education diversity. The study design will include exploratory case study site visits at 3 institutions in the base year, and an additional 12 in the 2nd year of the study. Researchers will conduct both within and across classroom analysis of learning in a variety of classroom settings.

Educational Significance of the Study: Much has been written about the value and importance of diversity in higher education. State, institutional, and national leaders in higher education have foreseen the necessity of adapting the higher education system to the changing ethnic composition of both the general population and the workforce. For decades colleges and universities have aimed to diversify their student bodies. However, the proportion of students of racial/ethnic minorities in higher education institutions still remains below their proportion in the general population. Diversity programs have been pursued by many institutions in an attempt to correct thmative action programs in higher education continue to be hotly contested in the courts based on the presumptions of reduced quality in higher education admissions and reverse discrimination.

The potential outcomes of diversity in higher education are difficult and complex. They have never been measured well. The purpose of this study is to empirically measure the outcomes of diversity and to inform important debates such as the legal ramifications of affirmative action in higher education

Status of the Study and Products: The first Technical Review Panel meeting to discuss the study design and site selection will be held on February 23, 1998. The study calls for the dissemination of the preliminary report on the first three case studies and a report on the state survey in the base year. Option Years 1 and 2 will include reports on the case studies of the other 12 institutions, in addition to a report on institutional systems. The final deliverables will include data collection instruments that can be used by institutions for their own self evaluations of diversity initiatives as well as a summary report of the findings.

OERI Contact: Sandra Garcia, 202–219–1597

Title of Study: Symposium—Competence Without Credentials: The Promise and Potential Problems of Computer-Based Distance Education

Principal Investigator(s): National Institute on Postsecondary Education, Libraries, and Lifelong Learning (PLLI), Washington, DC; The World Bank, Washington, DC

Program: Directed Research

Funding Level: $22,500.00 (meeting facilities were provided by the World Bank)

Project Period: 6/97–6/98

Project Design: This activity was designed to raise issues and provide empirical data that can help us ask better questions, if not formulate tentative answers, about learning on the World Wide Web. A number of issues were discussed at the symposium, including, for example:

- Are there practical and cultural barriers to distance learning?
- When firms and schools use distance education, what do they actually do and what are they learning about using Web-based technologies?
- How can we characterize the content of courses currently taught through Web-based education?
- How do employers assess competency with distance based education? How will students assess the relative utility of different training opportunities?
- What are the implications of the blurring of institutional boundaries?

This symposium was centered around four papers written from different perspectives. The first two papers focused on the growth of distance education in firms and institutions of higher education, examining issues from socioeconomic and demographic perspectives. The second two papers reach down to the level of practice and examine the issues from the perspective of users and developers. This provides the kind of real-world perspective that is so lacking in most discussions of distance education today.

Educational Significance of the Study: As work becomes more technical and requires higher levels of knowledge, the role of education in society changes. To the degree that intellectual capital becomes pivotal to the economy, people will increasingly require higher levels of education if they are to be meaningfully and gainfully employed. As work becomes more technical, and because the knowledge needed to work effectively is changing so rapidly, the need for continual training and retraining is escalating. In such a world, the economies that flourish will likely be those in which education and lifelong learning are easily available.

The dramatic emergence of the Internet and more recently the World Wide Web are suddenly providing an opportunity for transcending many of the problems associated with earlier forms of distance education. As educators in both firms and institutions of higher education become more adept at using these technologies well, learners throughout the nation will have access to dramatically expanded the opportunities for both work-based learning and general lifelong learning, as well.

Status of Study and Products: The symposium was held at the World Bank on September 19, 1997. The following papers were presented in draft form:

1. *Are Employers' Recruitment Strategies Changing: Competence over Credentials* by Laurie Bassi;
2. *High Tech vs. High Touch: The Potential Promise and Probable Limits of Technology-Based Education and Training on Campuses* by Kenneth Green;
3. *Learning Tools within a Context: History and Scope,* by Charles N. Darrah; and
4. *Employers as Course Developers: Are They the New Educational Institutions?* by Thomas Edgerton.

The revised papers and the proceedings of the symposium will be ready for publication at the end of February 1998.

OERI Contact: Nevzer Stacey, 202–219–1324

Title of Study: International Conference on Adult Learners: Emerging Needs and Good Practice

Principal Investigator(s): National Institute on Postsecondary Education, Libraries, and Lifelong Learning (PLLI); Washington, DC; The Organization for Economic Cooperation and Development (OECD), Paris, France

Program: Directed Research

Funding Level: $50,000 (about half will come from Center the National Center on Adult Literacy set-aside funds and about half from the Office of Vocational and Adult Education). Non-United States papers will be supported by OECD or the sponsoring country.

Project Period: April 6–8, 1998

Project Design: This activity is an interagency research conference, jointly sponsored by the U.S. Department of Education and the Organization for Economic Cooperation and Development (OECD). The conference will include approximately 75 invited guests, about one-third from the United States. The conference will focus on three problem areas common across many countries: immigrants with low language skills (including those with and without native literacy skills); adults with low levels of educational attainment (including those with learning disorders); and older adults.

The conference will include workshop sessions focusing on the above three topics. These will include reviews of the research and descriptions of model programs from various countries. Plenary sessions will include a conceptual paper on adult learning by James Greeno, Stanford University, (see below), two papers on the cultural and subcultural aspects of learning in various societies and their implications for program development, and a round-table discussion of the policy implications of all that was discussed at the conference. Participants in the roundtable discussion will include a representative of the World Bank, the National Research Council, UNESCO, and a prominent adult learning researcher.

Educational Significance of the Study: As adults continue to live longer, they have an increased need to continuously engage in lifelong learning. Yet, many adults are not able to participate in appropriate education and training activities. The conference will focus on three groups of adults whose problems are being faced by all developed countries. By combining leading conceptual analysis with policy and practice examples from various countries, it is hoped that this conference will help enable the adult education community to develop appropriate national programs that meet the growing learning needs of adults.

Status of Study and Products: A date and location for the conference has been scheduled (April 6-8, 1998 at the Georgetown University Conference Center). Several of the paper presenters have been identified, and invitations to the OECD countries have gone out with a preliminary agenda. The conference will result in one or more publications containing the papers and the proceedings. The work will be designed to provide research-based guidance for improving the field of adult education.

OERI Contact: Nevzer Stacey, 202–219–1324

Title of Study: Learning in, and for Participation in, Work and Society: An Integrative Study

Principal Investigator(s): James Greeno, Institute for Research on Learning, Palo Alto, CA

Program: Directed Research

Funding Level: $70,000 (Center set-aside funds)

Project Period: 09/01/97–08/31/98

Project Design: The National Institute on Postsecondary Education, Libraries, and Lifelong Learning (PLLI) has commissioned the Institute for Research on Learning (IRL) to synthesize what is known about how adults learn and the implications of this knowledge for current practice and future research. The ultimate purpose of this work is to establish the research base on which current practice and future research in adult learning ought to be grounded.

For many decades, the scientific study of the workplace has been dominated by a factory model, and the study of adult learning has been focused on teaching workers skills needed to accomplish tasks efficiently. A more inclusive view of work and adult learning is now emerging. This new view focuses on interactions people have with one another and how they form "communities" to accomplish activities. IRL will develop a conceptual synthesis of research studies around this new view, focusing primarily, but not exclusively, on activities in work settings. The concepts and principles that will come out of this synthesis will provide clearer connections between the new activity-oriented perspective and traditional task-oriented views of how adults learn. The work will explain in more detail how processes such as understanding, perception, and reasoning can be understood as aspects of behavior that support communication and coordination of various activities.

IRL is conducting a seminar that is reviewing and synthesizing research on activities in the workplace. The seminar is focusing on findings and conclusions of research studies. It is aimed at forming an integrated synthesis of concepts and principles. With input from the Institute's National Research and Development Centers, the work will be broadened to include adult learning in areas other than the workplace, especially with regard to basic skills learning among low literate adults, and general learning among highly literate adults in postsecondary education. It is anticipated that at least one workshop with experts in these other areas of adult learning will take place to help broaden the relevance and application of these adult learning concepts and principles.

Educational Significance of the Study: The field of adult learning and literacy is very practice oriented, with little conceptual base to support much of what it does. Instructional design and practice in postsecondary education is also a very underdeveloped field. Occasionally postsecondary educators will experiment with new technologies, but there is little understanding of how adults in particular settings learn best. The concepts and principles to come out of this synthesis will provide all adult educators a systematic compilation of research-based knowledge about adult learning. The work will also provide a basis for identifying important directions that should be given high priority for future research and development based on their promise to improve practice in adult learning.

Status of Study and Products: The examination of the literature has begun. An initial draft of the synthesis is expected in March 1998. A public presentation of the synthesis will be delivered at the PLLI/OECD international conference on adult learning to take place in Washington in April 1998.

Dr. Greeno will present his synthesis as a background paper for the conference. In light of the conference discussion and other reviews, the synthesis will be expanded and revised for publication by September 1998, and will be distributed widely to policymakers, practitioners, and researchers worldwide.

OERI Contact: Nevzer Stacey, 202–219–1324

Title of Study: Library Research and Federal Priorities

Principal Investigator(s): Michael Holzman, Libraries For the Future, New York, NY

Program: Directed Research

Funding Level: $8,500

Project Period: 07/29/97– 09/30/98

Project Design: In an attempt to identify a library research agenda for the 21st Century, the National Institute on Postsecondary Education, Libraries, and Lifelong Learning (PLLI) must know more about previous library research agendas and the research generated by them. A coherent body of research is critical to the progress and success of public library programs, services, and the lifelong learners who use them. PLLI has commissioned the Libraries For the Future (LFF) to identify and analyze library research projects since 1983 in terms of their cost, sponsoring agencies, principal investigators, and relevance to research priorities. The guiding question is: *To what extent have professed library research needs been met and what are the critical gaps that remain in the library research agenda*? Related questions include: To what degree has library research been funded from public and private sources? Who are the primary funding sources? What types of research have been funded? What critical areas has this research covered? What remains to be covered?

During the decade of the 1980s, the U.S. Department of Education sponsored two separate efforts to identify research priorities in the field of library and information science and to identify areas of broad concern and major potential impact on library and information services. LFF synthesized the findings from these two efforts (The Cuadra Report (1982), and Library Research—An Agenda for the 1990s (1989)), developed a set of research priorities, and examined the degree to which research had been conducted in these priority areas. LFF then conducted an exhaustive search of national databases and other literature sources to identify the major federal and nonfederal funding sponsors for library and information science research and to find unfunded projects that represented rigorous research. The unfunded projects include dissertations, conference papers, and journal articles. Data on funding was obtained from the annual reports or grants databases of foundations and federal agencies; from Web pages; and through phone calls to principal investigators or sponsoring institutions. This information was then tabulated using the research priorities developed from the synthesis to show the number of projects for each funding source that supports any of the identified research priorities and to show total funding dollars spent under each program.

Educational Significance of the Study: Libraries have always been affiliated with educational, cultural, and social agencies and institutions. Many have received funds from both public and private sources to carry out their missions. However, very few of these funds have gone toward library research. Without appropriate research serving as an foundation for improving library services, libraries will not be able to meet the modern needs of their clients (i.e., the lifelong learner and the educational institutions that these libraries support). Ironically, our information society could be well served by the information systems already in place in every community in the United States: the public library. This study will help identify further steps that could and should be taken to develop a research base for improving library services and the field of information science.

Status of the Study and Products: The report on *Library Research and Federal Priorities* was completed in December 1997. An invitational conference will be held in March 1998 to introduce the report and to discuss the issues it raises, including how a national research agenda in this field could best be carried out. Dissemination of the report, in print and electronic forms, will occur the following month. Public input will be sought on the questions of what the library research agenda for the 21st century should look like, how it should be funded, and how it should be managed.

OERI Contact: Barbara Humes, 202–219–1376

Introduction

The National Institute on Student Achievement, Curriculum, and Assessment was created by the Education Research, Development, Dissemination, and Improvement Act of 1994. It is housed in the Office of Educational Research and Improvement (OERI) in the U.S. Department of Education.

The mission of the Institute is to carry out a coordinated and comprehensive program of research and development to improve student achievement. The Institute supports and conducts research and development which promotes high levels of learning by focusing on:

- Improving teaching and learning to increase students' knowledge and skills in the core content areas such as reading, mathematics and science;
- The development and implementation of challenging content and performance standards;
- The design of scientifically rigorous and fair systems of testing, assessment and accountability;
- The effective use of technology;
- The structure and organization of schools designed to improve student achievement; and
- Safe and drug free schools.

Center for the Improvement of Early Reading Achievement (CIERA)

Title of Project: Center for the Improvement of Early Reading Achievement (CIERA)—Center Overview

Principal Investigator(s): Elfrieda H. Hiebert, University of Michigan, MI; P. David Pearson, Michigan State University, MI; and Connie Juel, University of Virginia, VA

Program: National Educational Research and Development Centers

Funding Level: $12,499,114. Year 1 $2,464,108; Year 2 $2,452,004; Year 3 $2,557,886; Year 4 $2,526,045; Year 5 $2,499,071

Project Period: 10/1/97–9/30/02

Center Mission and Focus: CIERA's mission is to improve the reading achievement of America's children by generating and disseminating theoretical, empirical, and practical solutions to persistent problems in the learning and teaching of beginning reading. A mission that responds to the urgent national need of raising reading levels cannot be accomplished by isolated efforts. Consequently, CIERA's efforts span six institutions and integrate professional organizations and state and federal agencies. At each site, there exist established partnerships among university-based researchers, teacher educators, and school-based educators.

The model that underlies CIERA's efforts acknowledges many influences on children's reading acquisition. The multiple influences on children's early reading acquisition can be represented in three successive layers. At the center of our field of vision is the reader and the text. It is ultimately the individual learner who must make sense of the printed word—the texts that present themselves for consideration, appreciation, information, challenge, and critique. But reading is a social phenomenon that extends beyond the individual. Children live in homes and communities. For many children, daycare/preschool settings form a community in which they spend considerable amounts of time. For all children, a community that figures prominently in is the school. These communities of children's daily lives form the second layer of CIERA's program of work. Beyond these immediate contexts of influence lie the more distant contexts that influence student achievement in powerful but indirect ways. These are the contexts that determine the resources that schools and teachers bring to the classroom to support young readers. These contexts include the teacher education institutions and professional development programs that support, or fail to support, teachers in their search for better tools to teach reading; and the local, state, and federal policies that determine the curriculum and resources at teachers' disposal.

CIERA has six interrelated programs of research within these perspectives that will provide empirical foundations for sound practices to increase children's early reading achievement:

1. The Reader and the Process of Reading Acquisition;
2. Individual Differences;
3. Home, School, and Community Environments;
4. Classrooms and Schools;
5. Teacher Development and Student Achievement in Early Reading; and
6. Policy and Assessment.

While each program stands on its own, all contribute to a single, overarching goal of high levels of early reading achievement.

Educational Significance of Center Work: The combined findings from the projects in program 1 should provide both researchers and practitioners a thorough understanding of literacy development from preschool through third grade and concrete models of exemplary practice, for both word-level and text-level tasks, that ensure all children learn to read. Projects in program 2, collectively, will demonstrate effective interventions to promote reading achievement of children at risk due to conditions that are often associated with school failure. Projects in program 3 will provide empirical data on factors that affect children's reading achievement from 3–8 years of age; the studies will inform reading theories about social, developmental, and contextual factors that influence reading achievement; and the studies will promote children's reading and inform parents and educators about effective reading practices with young children. Projects in program 4 will add to our knowledge in two important ways: first, by increasing our understanding of how to organize effective instruction, how to achieve the right balance between direct instruction in skills and strategies and student directed learning experiences, how to select the right books for children to read, and how to integrate reading instruction throughout the curriculum. Second, by helping us to better understand how schools can introduce and sustain innovations in classroom instruction and early intervention. Projects in program 5 set out to build the conceptual, empirical, and political arguments to demonstrate that teaching requires a unique combination of subject matter knowledge, professional knowledge, experience, and reflection upon the ways in which all three of these dimensions interact to nurture expertise. Thus, it will demonstrate that teacher knowledge, once acquired, improves student learning. Finally, projects in program 6 will evaluate reform efforts in ways that inform policy development and implementation. In general, specific concerns about the early reading achievement of our nation's youth have resulted in a variety of initiatives at both state and national levels. At the state level, legislators have enacted legislation to reduce class size, mandate phonics instruction, test teachers' knowledge of phonics, and develop and administer early reading assessments. At the national level, work has begun on an every-pupil fourth-grade reading test, and Clinton's America Reads Challenge calls for an army of volunteers to work with young readers. Clearly, federal support for an early reading center is part of this effort as well. Understanding and evaluating policy instruments as a vehicle for improving the teaching and learning of early reading is an important area of research for CIERA.

OERI Contact: Anne P. Sweet, 202–219–2043

Title of Study: Individual Differences in Learning to Read

Principal Investigator(s): Carol Sue Englert, Michigan State University, Lansing, MI;
Laura Smolkin, University of Virginia, Charlottsville, VA;
Laurie MacGillivray and Robert Rueda, University of Southern California, Los Angeles, CA; Nichole Pinkard, Joe Suina,
Holly Craig, and Tom Estes, University of Michigan, Ann Arbor, MI

Program: National Educational Research & Development Centers: Center for the Improvement of Early Reading Achievement (CIERA)

Funding Level: $977,429. Year 1 $240,352; Year 2 $231,821; Year 3 $179,246;
Year 4 $160,023; Year 5 $165,986

Project Period: 10/1/97–9/31/02

Project Design: America's poorest children, those who depend most on school experiences to learn to read, continue to be over-represented among struggling readers. The 1994 National Assessment of Educational Progress (NAEP) Reading Report Card stated that students who reported having a greater array of literacy materials in their homes displayed higher average reading achievement. At all three grades (4, 8, and 12), students who reported more frequent home discussions about their studies demonstrated higher reading proficiencies. And consistent with previous NAEP reports, reading proficiency at all three grades was higher on average for students whose parents had more education. Yet, even among children with poor home environments, there are students who surpass their peers and become successful readers. Research is needed on how these children "beat the odds" to become proficient readers and learners.

The goal in this study is to understand how some children "beat the odds"—why do some resilient children succeed in reading when their peers do not? CIERA investigators are examining how the factors that are typically considered liabilities, such as poverty, inappropriate motivation, and bilingualism, can be overcome.

The first project is examining the cognitive, social, and cultural dimensions of motivation for successful and less-successful, low-income minority students in grades K–3 in high-poverty schools. In one context, researchers are studying the factors associated with reading success of native Spanish-speaking children in one of the nation's highest poverty schools areas. In a second component, staff is examining the effects on African-American children's reading acquisition and interest in reading when they act as writers, illustrators, and singers in multimedia environments. In a third context, researchers are considering the nature of reading development of one of the nation's historically lowest-achievement groups, Native American students, when they are engaged in an intervention program that involves grandparents as tutors as well as phonemic awareness training. The three components involve case study methods (component one) as well as experimental treatments (components two and three).

The scope of work of the second project addresses the role of oral language in learning to read. The first study within this project involves the development of an instrument for assessing children's knowledge of Spanish orthography and phonology and its relationship to reading acquisition in Spanish and in English. After this instrument is administered to a large group of native Spanish-speaking children, analyses will provide insight into whether knowledge of the Spanish phonology and orthography assist children in mastering the basic features of spoken (phonemic awareness) and written (alphabet knowledge) English. A second study extends a line of research on the language growth of African-American children and the manner in which particular aspects of language knowledge distinguish skilled from unskilled learners within this population. The primary research question of this study is: What are the relationships among children's expressive and receptive language skills and early reading skills? More specifically, do significant positive relationships exist among sentence production, sentence comprehension, and dialect reading achievement?

The final project in this program of work (Project II.3) examines reading acquisition in special education students and variables related to effective teaching. This project builds on an existing line of work on the "Early Literacy Project" which has been focused on increasing the reading achievement of children in special education programs. This program will be extended by collecting information on the performance of special education students relative to their grade-level peers so that their progressions from oral to print literacy can be understood; and examining the effect of the intervention in primary-grade general education contexts. Another purpose of this project is to study the impact of technology on improving students' reading and writing development. Because students will be connected to other students in distant sites via the Internet, we will be able to study whether access to authentic audiences (others with whom to share and receive messages) and purposes (respond to or inform electronic pen pals) will enhance their everyday performance as beginning readers and writers.

Educational Significance of the Study: Projects in this program will identify children at risk for early reading difficulties and, more importantly, evaluate a variety of factors that can prevent these difficulties. We will identify motivational orientations to school and literacy that are characteristic of resilient children who have beaten the odds and learned to read successfully. We will also provide evidence on the relationship of oral language patterns of African-American children to reading acquisition, orothographic awareness of bilingual children, and interventions to enhance phonological awareness of at-risk learners. Finally, this program of work provides longitudinal evidence on a broad array of reading skills and motivation of children in special education classes and on the effects of a web-based program of reading and writing enhances children's literacy development. Explorations of and the creation of educational links to the communities of minority children may enhance minority student motivations to promote reading achievement of children at risk due to conditions that are often associated with school failure.

Status of Study and Products: CIERA began operations on October 1, 1997; hence, these studies are just getting underway.

Contact Person: Anne P. Sweet, 202–219–2043

Title of Study: The Reader and the Process of Reading Acquisition

Principal Investigator(s): Elfrieda H. Hiebert, University of Michigan, Ann Arbor, MI; and Connie Juel and Tim Konold, University of Virginia, Charlottsville, VA

Program: National Educational Research & Development Centers: Center for the Improvement of Early Reading Achievement

Funding Level: $839,302. Year 1 $156,361; Year 2 $163,369; Year 3 $170,700; Year 4 $170,609; Year 5 $178,257

Project Period: 10/1/97–9/31/02

Project Design: The consequences of not reading well spill over into all academic areas so that achievement in virtually every subject is compromised. Students who are not reading independently by the end of third grade are likely to have difficulty reading for their entire lives. The 1994 National Assessment of Educational Progress (NAEP) reading assessment found that 40 percent of America's 4th-graders were reading below the basic level—a figure that alarms educators, policy makers, and the public. The question of how to best teach reading falls directly on primary-level teachers who are searching for proven strategies that can make the task of reading instruction more scientific and more successful. Research is needed to specify what kind of early reading instruction is best for which children at what point in their development. This program of work consists of three projects that address three of the most critical, and thorny, issues of beginning reading acquisition:

- the optimal linguistic units (e.g., rime, phoneme) and the most helpful word identification strategies (e.g., cross-checking, analogy) for early reading instruction;
- the features of texts that support children in acquiring independent reading skills; and
- a model of reading acquisition that addresses the order in which children develop particular skills and strategies about reading.

Research in the first of three projects that make up this program of work examines instruction of linguistic units of words and word recognition strategies. It begins with a naturalistic study of the ways in which students learn about words and their strategies for unlocking unknown words by conducting observations in four, first-grade classrooms. These year-long observations focus on the nature and duration of instruction for specific linguistic units and strategies and the nature and amount of text reading. Next, an instructional experiment examines children's growth as a function of participation in some well-known approaches for guiding word identification development (e.g., synthetic phonics, key-word analogy training, strategy training in cross-checking procedures). The subsequent phase moves to collaborations with first-grade teachers to devise and test different approaches to "packaging" word learning activities and strategies. Finally, staff develops dissemination materials to share with teachers throughout the profession.

The second project in this program of work considers the influence of text difficulty on children's early reading. Three questions will be addressed by the various phases of this project:

- What are the variations in types and amounts of texts that first graders encounter in school?
- How are these variations related to children's reading achievement at particular points in grade one? and
- How do interventions that emphasize particular text properties influence the quality and quantity of first graders' text interactions?

These questions will be answered by, first, surveying the range of texts used in the interventions in the CIERA Network of Teacher Partners. The next step will be to conduct a descriptive analysis of text experiences and reading achievement of a sizable group of first-graders (N=160) and a follow-up case study of children's reading experiences and achievement in two classrooms of the larger sample. The final phase will involve integration of information from the survey, descriptive, and case study research to establish guidelines for teachers and text publishers. The guidelines will be used to implement interventions in which teachers are guided in emphasizing particular types of text at particular points in children's reading instruction.

Project three of this program of work will produce a cohesive model of reading and writing from preschool through third grade, encompassing word-level (i.e., word recognition and spelling) and text-level tasks (i.e., comprehension, writing). The design combines cross-sectional and longitudinal data collection and analysis procedures. Researchers use a wide range of measures: comprehending and composing, word recognition and spelling, and interim processes such as phonemic awareness, letter-naming, and concepts of print to children from ages four through eight, some through the entire period of the grant. Analysis of word-level and text-level knowledge will begin with separate regression equations for each age to investigate the individual and joint predictive power of various measures. Next, staff examine these domains to establish differential growth over time. These analyses will model different patterns of growth among children who are developing their literacy skills at different rates.

Educational Significance of the Study: Together, findings from these three projects will provide researchers and practitioners a thorough understanding of literacy development from preschool through third grade and concrete models of exemplary practice, for both word-level and text-level tasks, that ensure that all children learn to read. Project one will provide detailed answers to the common questions teachers ask about the nature, form, and sequence of effective word study instruction in first grade. Project two will focus on the specific influences of text characteristics and text difficulty on children's learning to read, especially as it affects the neediest children. Project three will yield a comprehensive and integrated model of development in word recognition, spelling, and reading and writing narrative and informational texts. These benchmarks will provide a practical map of literacy development for preschool through third-grade teachers.

Status of Study and Products: CIERA began operations on October 1, 1997; hence, these studies are just getting underway.

OERI Contact: Anne P. Sweet, 202–219–2043

National Center for Research on Evaluation, Standards, and Student Testing (CRESST)

Title of Project: National Center for Research on Evaluation, Standards, and Student Testing (CRESST)—Center Overview

Principal Investigator(s): Eva Baker and Co-Director, Joan Herman, University of California, Los Angeles, CA; Co-Director; Bob Linn, University of Colorado, Boulder, CO

Program: National Educational Research and Development Centers

Funding Level: $14M. Year 1 $2.4M; Year 2 $2.4M; Year 3 $2.4M; Year 4 $2.4M; Year 5 $2.4M

Project Period: 2/5/96–2/4/01

Center Mission and Focus:

1. Exert intellectual leadership in the purpose, design, and interpretation of assessment systems for the research, practice, and policy communities.

2. Conduct high quality research to create new knowledge and advance theories that will have long-term impacts on conceptions and interpretations of educational quality.

3. Develop tools, procedures, and systems to improve the quality of assessment as practiced in schools, interpreted by policymakers, and understood by the larger public.

4. Create and evaluate approaches and accommodations that promote equity of assessment.

5. Engage teachers, researchers, policymakers, and the public in reflection and action to improve assessment and its link to educational quality through direct connections with CRESST products and staff.

Educational Significance of Center Work: CRESST has become a significant national resource in the areas of assessment, accountability, and evaluation. In each of these areas, CRESST has addressed technical problems attendant to policy challenges of national interest; and provided sound interpretations of research and useable findings to the research community, policymakers, the media, and educational constituents.

OERI Contact: David Sweet, 202–219–1748

Title of Study: Accommodation in Assessments of Students with Disabilities

Principal Investigator(s): Eva Baker, University of California, Los Angeles, CA

Program: National Educational Research and Development Centers: Center for Research on Evaluation, Standards, and Student Testing (CRESST)

Funding Level: $877,585. Year 1 $177,769; Year 2 $174,955; Year 3 $174,956;
Year 4 $174,949; Year 5 $174,956

Project Period: 6/1/96–5/31/01

Project Design: The assessment of disabled students is a pressing policy issue with little research to guide key decisions. Current reform movements (reflected in IASA, Goals 2000, and IDEA) establish high expectations for all students including those with disabilities. Advocates for disabled students have called for their inclusion in regular assessments to ensure that they are exposed to the general curriculum. Local and state pressures for increased educational accountability have also contributed to increases in the assessment of disabled students. The result is that states and districts are including more and more disabled students in their assessment systems. The trend is likely to continue.

The lack of empirical data on assessing disabled students is distressing. Important decisions are being made, especially in the area of testing accommodations, based on a best-guess strategy. As Eileen Ahearn from the National Association of State Directors of Special Education, said in 1995, "currently, there is no way to produce credible, policy-relevant information on the achievement of outcomes for students with disabilities using state assessment data." She also maintained that "there is a critical need to support research and to disseminate findings on all topics related to assessment [of disabled students]."

Relatively little is known about the quality of assessment data pertaining to specific categories of disabled students. We have little information about:

- the implications of assessing low-scoring students with increasingly difficult assessments,
- the consequences of different types of assessment programs for different types of disabled students,
- the effects of greater inclusion and accommodations (i.e., special administrative conditions) on the quality of assessment data, and
- if assessment results obtained from disabled students—both with and without accommodations—support the inferences that people will base on them.

The studies proposed in this project address all of the general issues above and are of three general types:

- Descriptive studies of disabled students and their achievement;
- Studies of the effects of policy changes on the assessment of disabled students (e.g., on classification, retention, inclusion, out-of-grade testing, and provision of accommodations).
- Measurement studies focusing on the validity of assessment information pertaining to disabled students.

To date, the project has focused on the assessment of students with disabilities in Kentucky which has one of the most innovative assessment systems in the country. Additional data sources are under consideration which will help to answer many remaining questions.

Educational Significance of the Study: This work has the potential to substantially influence the assessment of both disabled students and other groups of students with special needs. Most of the issues being addressed pertain directly to Title I assessment requirements, with potential relevance for over 70 percent of all schools in the country. The scarcity of research in this area and the timeliness of the proposed work should increase its impact at the national, state, and local levels. Efforts will be made to further this impact by disseminating the work through diverse channels, including standard research outlets, nontechnical publications, presentations both within and outside the research community, and contacts with the lay media. Reflecting the demand for information from this project, over 1,000 copies of the first major report, *Assessment of Students with Disabilities in Kentucky*, have been downloaded from the CRESST Web site in just 4 months. Findings were also mentioned in Education Week in Fall, 1997.

Status of Study and Products: The research to date examined the rate of inclusion of students with disabilities in Kentucky, the frequency with which accommodations were used, the relationships between accommodations and scores, and a variety of indicators of assessment quality. The findings show that Kentucky successfully included nearly all students with disabilities in its regular statewide assessment program except those with the most serious disabilities. However, the quality of the Kentucky assessment results for students with disabilities was mixed. For example, fourth-grade students with disabilities had a disproportionately high percentage of disabled students who failed to try the mathematics questions or who scored zero, suggesting that this part of the assessment was too difficult for many students with disabilities. Other issues for the quality and comparability of results were the inconsistent use of assessment accommodations across grade levels, the sheer number of accommodations provided to students with disabilities, and negative effects of some accommodations on the quality of the assessment results.

Our latest research examines the importance of format (multiple-choice versus open-ended response) for the assessment of students with disabilities, and possible differences between students with and without disabilities in the skills actually assessed, for example, differences in the importance of verbal skills.

OERI Contact: David Sweet, 202–219–1748

Title of Study: Assessment in Action: Making a Difference in Practice

Principal Investigator(s): Eva L. Baker, University of California, Los Angeles, CA

Program: National Educational Research and Development Centers: Center for Research on Evaluation, Standards, and Student Testing (CRESST)

Funding Level: $893,379. Year 1 $219,672; Year 2 $194,638; Year 3 $177,098; Year 4 $161,761; Year 5 $140,210

Project Period: 6/1/96–5/31/01

Project Design: Across the country, states and districts are involved in developing and attempting to use standards-based assessment systems to stimulate school reform and to enable all children to achieve high standards. They are finding substantial practical and technical challenges in bringing such promise to reality. In this project, CRESST directly confronts scale up issues which emerge when moving from promising research models and practical prototypes to the complexity of developing a credible, fair, balanced, and cost sensitive assessment system for major urban districts.

Conducted in collaboration with the Los Angeles Unified School District, the project uses research-based models which can be the basis for both large assessments and classroom practice. Rooted in action research, the project is identifying and seeking solutions to issues which arise in the development process, concentrating particularly on the challenges of teacher capacity building and the accommodation needs of language minority students. Further, there are many lessons to be learned through documentation of the process.

The project is using a variety of qualitative and quantitative strategies to investigate important questions which naturally occur in the development process:

- What are the relative advantages and disadvantages of alternative approaches to developing, scoring, standards-setting, reporting, and training?
- How do standards and assessments influence teachers and their teaching? What can be learned about various options for building teacher capacity?
- What are the sociopolitical and technical problems which arise during the development and implementation process? What are effective approaches to their solution?
- How can the assessment needs of language minority students be accommodated? What are practical assessment models that can be used for such assessments?

Educational Significance of the Study: The project is directly influencing the teachers and children in the large urban district with which it collaborates—currently amongst the largest urban district in the country, and encompassing over 670,000 children. The project furthermore is gaining important technical and practical knowledge that will be of real value to others across the country who are engaged in, or ready to engage in, similar development efforts.

The project plans a variety of products, including practical tools and guidance for schools practitioners, district and state administrators, test publishers, and professional development providers; policy briefs for policymakers and school leaders to clarify the pros, cons, and costs of various development options; as well as reports which will inform the research community about the technical and sociopolitical insights gained.

Status of Study and Products: In collaboration with the district and the teacher union in one urban district, the project has completed a handbook on standards-based instruction and assessment. It is scheduled to be distributed to all schools in the district, making it available to over 30,000 teachers. The curriculum and assessment examples, combined with samples of student work that show various levels of performance, should also be useful to others across the country.

Research from the project has been presented or published as follows:

- Aschbacher, P.R. (Autumn 1997). *New directions in student assessment*. Theory into Practice. 36:4
- Aschbacher, P. R., Stanley, L., and Waltman, K. (June 1997). *The seduction of standards-based educational reform*. et al. (February 1997). Panel presentation at the annual CCSSO Conference on Large Scale Assessment. Colorado Springs, CO.
- Butler, F.A. (in press). *Academic language proficiency tasks for K–12 language minority students: A prototype development effort*. Language Testing Update, 22.
- Butler, F.A. (Autumn 1997). *Oral language assessment in the classroom*. Theory into Practice. 36:4
- Butler, F.A. and Stevens, R. (1997). *Accommodation strategies for English language learners in large-scale assessments: Student characteristics and other considerations.* CSE Technical Report # 448. Los Angeles, California: Center for Research on Evaluation, Standards, and Student Testing (CRESST).
- Herman, J. (Autumn 1997). *Assessing new assessments: How do they measure up?* Theory into Practice. 36:4
- Waltman, K. (September 1997). *Co-developed performance assessments in two languages: Threats to comparability.* Presentation at the annual CRESST Conference. Los Angeles, CA.

OERI Contact: David Sweet, 202–219–1748

Title of Study: Coherence and Collaboration: The Equity and Methodology Symposia

Principal Investigator(s): Robert Linn, University of Colorado, Boulder, CO

Program: National Educational Research and Development Centers: Center for Research on Evaluation, Standards, and Student Testing (CRESST)

Funding Level: $928,458. Year 1 $185,213; Year 2 $194,723; Year 3 $179,224;
Year 4 $180,436; Year 5 $188,862

Project Period: 6/1/96–5/31/01

Project Design: Complex research programs must find the right balance between focus and coherence. While individual projects may explore particular problems in detail or advance knowledge and theory in specific domains, Centers must find effective ways to synthesize and apply the knowledge produced across projects to large, intricate problems which confront the field. The CRESST Equity and Methodology Symposia specifically addresses the need for such synergy. It brings together many of the best minds in the country to share and resolve difficult technical quality and equity-related questions in practice.

The CRESST Equity and Methodology Symposia cover broad topics of interest that cut across many CRESST projects. Top technical experts such as Lee Cronbach, Robert Linn, Richard Shavelson, Eva Baker, David Wiley, David Rogosa, Noreen Webb, Lorrie Shepard, Bengt Muthen, Michael Seltzer, and others, gather for semiannual presentations and discussions which link the diverse CRESST topics. Each member has an opportunity to present specific research issues to a problem-focused working group, with ample time provided for feedback and follow-up actions.

The agenda for the methodology symposium is as follows:

- Year One: validating multilevel information systems including issues of standards setting; evaluating, and reporting on the dependability of assessment results.
- Year Two: construct validity and response processes.
- Year Three: measurement of progress, including reasonable, alternative comparisons.
- Year Four: reporting strategies and the display of uncertainty.
- Year Five: coherence of results, system alignment, and the inferences to be drawn from studies of practice.

The agenda of the equity symposium was placement and accommodations for the first year, and alternative linguistic assessment designs and construct validity of assessments of special populations for year two.

Educational Significance of the Study: CRESST envisions multiple benefits to this project. Individual projects benefit from concentrated expertise applied to some of the most persistent problems in educational measurement. Cohesion across projects is a likely outcome through the sharing process, plus an overall increase in the knowledge of symposium participants. Long-term significance of this project is likely to occur through the knowledge gained in working on common problems. The benefit is expected to flow to the dozens of states, districts, and schools in which the partners are working, as well as to the United States effort to develop national standards and tests.

Status of Study and Products: To date, CRESST has conducted three symposiums with plans for a fourth meeting in late spring 1998. As intended, topics have crossed multiple CRESST projects. Symposium #1 focused on the evaluation of the accuracy of assessment information while Symposium #2 included presentations reporting on the accuracy of standards-based assessments and key issues of assessment validity. Symposium #3 covered statistical methodology for the measurement of individual student change, hierarchical linear models for assessing growth, structural modeling in the analyses of longitudinal data, interpretations of trends from different assessments, and linking assessments.

The original plans for an equity symposium have been incorporated into the CRESST conference. The 1996 and 1997 conferences included 28 presentations, workgroups, special panels focused on equity related issues. Results from these sessions are presented in the conference proceedings.

OERI Contact: David Sweet, 202–219–1748

Title of Study: Comprehensive Systems for Accountability and the Measurement of Progress

Principal Investigator(s): Eva L Baker, University of California, Los Angeles, CA

Program: National Educational Research and Development Centers: Center for Research on Evaluation, Standards, and Student Testing (CRESST)

Funding Level: $285,117. Year 1 $53,515; Year 2 $56,669; Year 3 $58,129; Year 4 $58,774; Year 5 $58,030

Project Period: 6/1/96–5/31/01

Project Design: States and large districts rely on assessment systems to serve several common functions. Three of the functions that most systems are intended to serve to one degree or another are monitoring, accountability, and improvement. Policymakers and the public want to know how schools are doing and want information to support improvement in schools and classrooms. They also want educators held accountable for results.

Although states and districts differ in the emphasis given to these three functions—and other purposes could be added to the list—some combination of the three functions can be found in any state or district assessment system. A particular assessment system, however, may not serve these functions equally well. A design that has high validity and utility for monitoring progress of student achievement, for example, may not provide a valid, fair, or credible basis for holding educators accountable. Similarly, an assessment system that provides the basis for valid, equitable, and credible accountability may not provide information that is useful for improving education and student achievement.

The amount of time devoted to testing and assessment is already substantial. Indeed, many would argue that the multiple testing requirements for various purposes defined by districts, states, and the evaluation of federal programs such as Title I already place too heavy a testing burden on schools. Thus, there are strong reasons to attempt to have a single assessment system serve multiple purposes, for example, monitoring student progress, program evaluation, school-building and teacher accountability, and improving student achievement. This leads to the need for the design of systems that yield results which are valid, fair, useful, and credible for multiple purposes.

The research project will address a wide range of questions that are relevant to a comprehensive validation of an assessment and accountability system. These questions are related to the goals of system coherence, inclusion and accommodation to students with special needs, and the measurement of student and educational system progress. Questions to be addressed include:

- Do assessments measure what students are expected to know? How closely are they aligned with the curriculum? Do they measure rigorous content? Do they encourage the teaching of advanced skills?
- Are all students included in the assessments? How do placement decisions impact inclusion? Are appropriate adaptations and accommodations provided to allow students with diverse needs to demonstrate what they know and are able to do?

- How comparable are the assessments from one year to the next?

This project also seeks answers to issues of accommodations for students with limited English proficiency, analytical means for dealing with student mobility, safeguards to prevent both intentional (e.g., unfair assessment administration practices) and unintentional (e.g., inflated ratings by teachers of work of their own students) corruption of the system results, fairness to schools and at-risk youth, consequences of the accountability results for teaching and learning, and dependability of assessment results.

The project is planned as a collaborative effort with selected states (e.g., Oregon, Washington) and large school districts (Los Angeles, Chicago). Four key features will be stressed in one or more of the collaborative efforts. First, emphasis will be on the measurement of progress. Second, alternative ways of dealing with multiple measures (e.g., the creation of accountability composite versus the analysis of a profile of scores will be pursued). Third, the analysis of validity, comparability, and fairness of assessment results will be featured. Fourth, the dependability of scores reported in different ways (e.g., means, proportions of students meeting a standard) will be analyzed.

Educational Significance of the Study: This study will contribute to the design of more valid, equitable, useful, and credible state and large district assessment and accountability systems. The project results are expected to provide the basis for models that can be used in meeting the spirit of the accountability systems that are envisioned for Title I programs in the Improving America's School Act. It will also provide models for meeting the sometimes competing demands for an assessment system that is valid and useful for the multiple purposes of monitoring, accountability, and educational improvement.

Status of Study and Products: The project is underway and two reports have been completed—one prepared for a policymaker audience and one for a research audience. *"A Policymakers Guide to Standards-Led Assessment"* by Robert Linn and Joan Herman was jointly published by CRESST and the Education Commission of the States. The second report entitled *"Standards-Led Assessment Technical and Policy Issues in Measuring School Performance"* by Linn and Herman is available as CSE Technical Report 426. Two journal articles were also published in 1997: Linn, *"Evaluating the validity of assessments: The consequences of use,"* Educational Measurement: Issues and Practice, 16, No. 2, 14–16; and Cronbach, Linn, Brennan, & Haertel, *"Generalizability analysis for educational assessment,"* Educational and Psychological Measurement, 57, 373–399.

Products will include a series of reports and journal articles on alternative assessment and accountability system designs and factors that influence the validity, utility, fairness, and credibility of the results.

OERI Contact: David Sweet, 202–219–1748

Title of Study: Construct Validity: Understanding Cognitive Processes—Performance Tasks and Standardized Tests

Principal Investigator(s): Lauren Resnick and David Wiley, LRDC, Pittsburgh, PA;

Program: National Educational Research and Development Centers: Center for Research on Evaluation, Standards, and Student Testing (CRESST)

Funding Level: $897,100. Year 1 $176,247; Year 2 $187,664; Year 3 $179,890; Year 4 $176,154; Year 5 $177,145

Project Period: 6/1/96–5/31/01

Project Design: Throughout the 20th century, the developers of testing theory and those responsible for developing commercial tests have largely ignored the learning processes that underlie the acquisition of knowledge and skills. As long as tests were confined to measuring performance on a large collection of essentially similar test items, "learning" could be inferred from higher performance on statistical constructs around which the individual items clustered. For example, measurement procedures, such as item-response theory, oftentimes assume that a single task measures a single skill or dimension. Such an assumption fails to acknowledge both common sense and the pressing need for students to possess multiple, complex, and integrated skills if they are to achieve high standards.

Understanding the learning processes behind an assessment requires an awareness of the developmental level of students as well as the opportunities students have to learn the content or acquire desired skills. Such an understanding better explains the variability in students' performance across different tasks, different methods, and students' backgrounds.

Another vital need is to provide evidence to answer a key presumption about performance assessments, that is, do performance assessments tap higher order knowledge and skills? If the answer is yes, then a strong case can be made for the inclusion of performance assessments in all assessment systems. A final need for researching the cognitive processes behind performance assessment is to help understand differences in performances across populations. Answers to this question have vital consequences for the performance of language minority and special needs students.

This project attempts to find answers to the following questions:

- How does variability arise over different assessment tasks, different methods, and over differences in students' backgrounds and instructional experiences?
- Do performance assessments measure higher order thinking skills?
- What constructs are distinguishable in constructed response tasks and can the tasks be designed to sharpen and improve such distinctions?
- What procedures are suitable for score alignment from different assessments and different scores?

CRESST researchers will build on the previous large-scale statistical analyses of multiple choice and constructed response tasks from the National Education Longitudinal Study (NELS:88) for the analyses of the variability and constructs discussed above. Preexisting interview procedures will be used to obtain indepth verbal descriptions of student thinking as students work through constructed response math and science tasks.

Data from the Learning Research and Development Center's (LRDC) New Standards Project will be used to address alignment issues and questions related to the cognitive skills tapped by performance assessments. Multivariate statistical methods will be developed and used to assess multidimensional questions.

Educational Significance of the Study: The overall results of this study will provide a basis for developing a theory of assessing student achievement that simultaneously accounts for content and cognitive processes during assessment. It will provide states and school districts with a foundation for judging alignment of assessments to content standards and the degree to which assessments measure conceptual understanding and high level problem solving skills. The results will also contribute to the work across other CRESST projects.

Status of Study and Products: A paper on instructional validity, opportunity to learn, and equity has been completed. Data from the California Mathematics Renaissance are used to illustrate this type of analysis. A second deliverable, Standards-Referencing as an Extension of the Concept of Criterion-Referencing, will be completed in January 1998.

OERI Contact: David Sweet, 202–219–1748

Title of Study: Dependability of Assessment Results: Statistical Indicators

Principal Investigator(s): David Rogosa, Stanford, University, Palo Alto, CA; and David Wiley, New Standards, LRDC, Pittsburgh, PA

Program: National Educational Research and Development Centers: Center for Research on Evaluation, Standards, and Student Testing (CRESST)

Funding Level: $376,268. Year 1 $76,541; Year 2 $74,917; Year 3 $74,761; Year 4 $74,838; Year 5 $75,211

Project Period: 6/1/96–5/31/01

Project Design: Traditional analytic methods are poorly suited to many important issues in contemporary educational assessments. Current tests (either traditional standardized tests or performance assessments) usually provide adequate accuracy for most group summary purposes, but may not provide adequate accuracy for individual scores. As learned from the technical analyses of the California Learning Assessment System, standard use of generalizability-theory (G-theory) for performance assessment data is problematic, even though such analyses dominate the literature. Moreover, initial empirical and analytic work indicates that recent state-of-the-art procedures to extend generalizability-theory analyses to the estimation of misclassifications for individual scoring in performance assessment settings can be seriously misleading and should be viewed skeptically.

This research focuses on three key questions related to the dependability and reporting of test results:

- What are the sources and magnitudes of error in performance-based assessments?
- How dependable are individual student scores from performance assessments?
- How dependable are school-level scores from performance assessments?

The researchers are using formulations of data structures commonly found in G-theory applications to determine the conditions under which G-theory methods can accurately describe results from performance assessments. This research will allow evaluation of interpretations of variance components for a wide range of assessment applications, and furthermore, evaluation of the application/extension of G-theory methods to provide measures of accuracy (e.g., standard errors, or misclassification probabilities) in the reporting of individual or group outcomes.

Educational Significance of the Study: Performance assessments have often been criticized, especially relative to traditional multiple-choice achievement tests, for an apparent lack of accuracy (e.g., for individual scoring and even school level results). Such technical problems have even contributed to the complete dissolution of state- and district-wide performance-based assessments, (e.g., Arizona, California, Littleton (CO). The identification of sources of error and the relative magnitude of error associated with those sources for all types of assessments is essential as assessment systems are implemented by states and school districts. This study contributes to a greater understanding of the components of measurement error and will lead to more dependable score reporting.

Status of Study and Products: The early results support the researchers' original hypotheses related to the importance of a deeper analysis of the unmeasured components of measurement error. We know, for example, that the difference between a very good rater on a performance assessment and a very bad rater may be completely imbedded in the unknown measurement error. We expect that our ongoing research will lead to more accurate understandings of measurement error and better reporting of individual student scores on assessments. Project findings are reported in the draft deliverable, Estimating Consistency and Accuracy of Classifications in Standards-Referenced Assessment.

OERI Contact: David Sweet, 202–219–1748

Title of Study: CRESST Assessment Dissemination: Listening, Knowing, and Acting

Project Investigator(s): Ronald Dietel, University of California, Los Angeles, CA

Program: National Educational Research and Development Centers: Center for Research on Evaluation, Standards, and Student Testing (CRESST)

Funding Level: $2,265,008. Year 1 $421,013; Year 2 $415,599; Year 3 $477,976; Year 4 $460,924; Year 5 $489,496

Project Period: 02/01/96–05/31/01

Project Design: Since the first centers were funded in 1966, virtually every report analyzing the impact of federal education research has cited challenges of getting research into practice. While there are many causes to the problem, some key factors have included:

- Resources: Research centers were funded at levels too low to mount a widespread and effective dissemination effort. Given the enormous sizes of potential audiences, i.e., 16,000 school districts, 100,000 schools, and over 3 million teachers, the task seemed insurmountable. A media did not exist that could even hope to reach such numbers, let alone over 60 million parents of school-aged children.

- Lack of communication: A gap existed in the language used between researchers, educators, and the general public, resulting in ambivalence, misunderstanding, and mistrust. Isolation was the rule, not the exception between research, practice, and the public.

- Unknown Dissemination Quality and Impact: Coming as it usually did at the end of research cycles, not integrated from the beginning of a research program, dissemination was fragmented, of uneven quality, and relied too much on guesswork of impact. Because center research findings were typically filtered through change agents, attribution of impact was difficult, if not impossible to trace to educational research.

What was needed was a dissemination strategy with sufficient resources, commitment to practice and public engagement, and new ways of measuring dissemination quality and impact.

CRESST has dedicated substantial investment to its dissemination program and focused significant effort into public engagement and measuring dissemination results. Based on successes in earlier grant periods CRESST has continued with the following dissemination activities:

- Interactive dissemination including meetings with national, state, and school district policymakers to develop improved assessment systems. For example, CRESST met on numerous occasions with U.S. Department of Education officials on such vital issues as the voluntary national standards and tests and Title I assessment. CRESST researchers continue to serve on notable and highly visible education committees, panels, and boards, sharing their knowledge with those most likely to use and further spread CRESST research results. Fulfilling their commitment to public engagement, CRESST responds to over 100 phone calls or "Ask an Expert" e-mail messages each month, answering assessment-related questions, many of them connected directly to practice and others with significant policy impact.

- Workshops, videotapes for PBS distribution, presentations, assessment models implementation (LAUSD and Chicago), and viewgraph distribution from major projects such as Title I.

- Publications in major academic and practitioner focused publications such as Educational Measurement and Theory Into Practice . Continued also were the CRESST Line and Evaluation Comment newsletters and the CSE technical report series, with approximately 40 new reports completed in 1997 alone.

Expansion was made in CRESST dissemination during the past 2 years resulting in additional audiences served. Over 3,000 complete technical reports are downloaded each month from the CRESST web site, far surpassing previous results and expectations. The first CRESST policy deliverable, "*A Policymaker's Guide to Standards-Led Assessment*" by Robert Linn and Joan Herman and jointly published by ECS and CRESST, was distributed to over 6,000 key educators and was one of the most popular documents at the Fall 1997 Improving America's Schools conferences. In responding to the need to communicate in plain language, two publications were produced, the shorter and more widely distributed report written directly for policymakers and practitioners.

CRESST established baseline data for measuring quality and usefulness of dissemination and research programs through a comprehensive internal evaluation in 1996–97. In addition to providing quantitative and qualitative results on CRESST quality, the results have been or are being shared across laboratories and other research centers to help fulfill CRESST's commitment to collaborate across all federal education R&D providers.

The role CRESST has played in influencing decisions related to national standards and assessments and for Title 1, has already had important consequences for nearly every school and student in the United States. CRESST Project 1.2 alone will have important impact for two of the largest school districts in the country, LAUSD and the Chicago Unified School District. Some research fields, such as CRESST project 2.3, Accommodations, provide the only solid evidence to policymakers and other educators related to the consequences of providing accommodations to students with disabilities. CRESST featured the first deliverable from project 2.3 on the home page of its web site, contributing to more than 1,000 copies being downloaded in a span of less than 4 months.

Educational Significance of the Study: CRESST envisions multiple benefits to this project. Individual projects benefit from concentrated expertise applied to some of the most persistent problems in educational measurement. Cohesion across projects is a likely outcome through the sharing process, plus an overall increase in the knowledge of symposium participants. Long-term significance of this project is likely to occur through the knowledge gained in working on common problems. The benefit is expected to flow to the dozens of states, districts, and schools in which the partners are working, as well as to the United States effort to develop national standards and tests.

Status of Study and Products: All CRESST project 4.0 deliverables are on track with only several minor deviations. For example, because demand for the "Five Years of CRESST Research on CD ROM" was less than expected, this deliverable was replaced by the 1997 CRESST Conference. (Conferences were originally only planned for 1996, 1998, and 2000.) This change became fortuitous because of the unexpected interest on national standards and tests which was a large focus for the 1997 CRESST conference.

OERI Contact: David Sweet, 202–219–1748

Title of Study: The Effects of Standards-Based Assessment on Schools and Classrooms

Principal Investigator(s): Eva Baker , University of California, Los Angeles, CA

Program: National Educational Research and Development Centers: Center for Research on Evaluation, Standards, and Student Testing (CRESST)

Funding Level: $1,423,239. Year 1 $266,801; Year 2 $290,961; Year 3 $291,121; Year 4 $293,192; Year 5 $281,164

Project Period: 06/01/96–05/31/01

Project Design: Any number of states and districts have changed their assessment systems over the last several years in the hope of focusing attention on new standards for students, promoting improved classroom practice, and providing data for school improvement. These reforms depend on principals and teachers for their success. School staff must translate the lofty goals embodied in the assessments into practice and, in fact, change their practices.

Yet policymakers give little attention to the process through which such changes can best occur (e.g., how schools support such changes and how teachers adapt their teaching and curriculum to new standards and broadened achievement expectations). We know relatively little about the factors that explain successful schools and classrooms, including incentives for change, staff development efforts, local support networks, and the perceptions of teachers and students about assessment. Such knowledge would contribute to more effective policies and practices to further educational reform and raise student achievement.

The project combines survey and case study methods to examine the consequences of assessment reform in two states. Two broad questions frame the inquiry:

- What are the effects of recent statewide assessment reform on school structures, classroom practices and student outcomes?
- What combination of factor explains the differential patterns of success within and across schools and states?

Surveys are being used in each state to identify broad patterns of impact and to explore differences in practice among teachers and schools. Case studies are exploring in depth factors that determine differential success of assessment-based reform efforts across districts and schools and the characteristics of exemplary practices.

Teachers and students are the principal informants for the study. The subjects of mathematics and literacy at both elementary and middle school grade levels, frame the study.

Educational Significance of the Study: Knowledge of how assessment reform works and the factors which contribute to its success will be valuable to policymakers at the state and district levels. School practitioners also will benefit from how best to support reform at their local sites. The project is also working formatively with the states and districts which participate in the study to help them improve their assessment systems and support services.

Status of Study and Products: The project has conducted surveys and initial case study work in one state and is currently negotiating access to a second. Insights from the projects first year's work are summarized in Stecher, B., Borko, H., Wolf, S. & Barron, S. (1997). Important features of state assessment system from the local perspective: Interim report.

A report of first year survey and case study results is forthcoming.

OERI Contact: David Sweet, 202–219–1748

Title of Study: Assessment of Language Minority Students

Principal Investigator(s): Eva Baker, University of California, Los Angeles, CA

Program: National Educational Research and Development Centers: Center for Research on Evaluation, Standards, and Student Testing (CRESST)

Funding Level: $485,663. Year 1 $96,196; Year 2 $102,829; Year 3 $98,296; Year 4 $92,664; Year 5 $95,678

Project Period: 06/01/96 – 05/31/01

Project Design: Standards-based assessments pose special challenges for the assessment of language minority students (LMS).. Clearly, if a student is not proficient in the language used for the assessment, then the student will not be able to show what he or she knows about the content area being assessed, nor will the student be able to demonstrate language and literacy skills in his or her native language. The problem is even more acute for performance assessments which often increase the oral and written demands of an assessment by posing authentic problems (often in writing) and asking for constructed responses (often in writing).

In the past, the simplistic solution has been to simply exclude non-English speaking students from participation in formal achievement testing. However, this solution leaves an important and growing population of students outside of the accountability system, invisible to the public; and fails to assure that language minority students are making progress toward the same content standards expected of other students. Recognizing these ills, the current Title I regulations require that all students be tested.

In practice, we have very limited experience trying to solve the conceptual, technical and logistical problems of the policy of inclusions. Past measurement research has only limited applicability when the form and nature of assessments are being changed so dramatically from basic skills multiple choice testing to standards-based systems which include performance assessments.

The project has proposed a preliminary framework on which to base research on the assessment for language minority students. The framework identifies three proficiency domains that are critical for instruction and assessment of language minority students: subject matter knowledge, native language literacy, and English language literacy. With respect to each domain, four critical issues are identified for research:

- How should the performance continuum be conceptualized? What are appropriate benchmarks indicating increasing levels of proficiency?
- What logistical problems or adaptation needs must be addressed to make it feasible for the assessment of LMS?
- Do assessments with adaptations provide valid and fair demonstrations of learning for LMS?
- What are the instructional implications of assessment use?

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The project is using multiple modes of inquiry, including convening an expert panel to frame the issues and to identify available research and other resources for the work, commissioned papers, collections of work samples, interviews with teachers in sites where states are attempting greater inclusion, reanalysis of state data bases, and small-scale validity studies comparing official assessment results to classroom work. The work is being conducted in collaboration with the Center for Research on Education, Diversity and Excellence (CREDE).

The project is currently concentrating on a collaborative study with the state of Rhode Island. Samples of students' classroom work have been collected from across the state and a system of scoring that work has been devised. The system uses benchmark examples characterizing students' work at different levels of proficiency. Scores on student work will be compared to state assessment results.

Educational Significance of the Study: The project will be influential in the research community, stimulating research that will improve the validity and utility of assessment for language minority students. The project's conceptual framework and the results of our validity studies, furthermore, should directly contribute to assessment development efforts by states, local schools, and test publishers.

Status of Study and Products: As mentioned above, a validity study is under way and results should be available shortly. The benchmarks developed for the project will also be available.

OERI Contact: David Sweet, 202–219–1748

Title of Study: Models-Based Assessment Design: Individual and Group Problem Solving

Principal Investigator(s): Eva Baker, University of California, Los Angeles, CA

Program: National Educational Research and Development Centers: Center for Research on Evaluation, Standards, and Student Testing (CRESST)

Funding Level: $1,511,445. Year 1 $308,851; Year 2 $307,375; Year 3 $303,719; Year 4 $306,087; Year 5 $285,413

Project Period: 06/01/96–05/31/01

Project Design: Assessment is asked to play a pivotal role in educational reform both as a measure of performance and an instrument to focus school improvement. Needed are new assessments which mirror the high standards we hold for student performance, which provide technically credible measures of student achievement, and which provide guidance to improve teaching and learning. The last decade has seen any number of attempts to provide such measures, but they have been limited by uneven technical quality, high costs, and inadequate attention to what we know about how children learn and develop. Missing are strong links between assessment and theories of learning and instruction that would enhance the validity and efficiency of assessments and their utility in informing instruction and improving learning.

In this project, CRESST continues a line of inquiry started in the late 1980's to develop and validate generalizable assessment models that can be used to both generate assessments and develop effective instructional opportunities across grade levels and subject areas. Aimed at developing a new technical basis for test design, the project is building an integrated framework that can be used to develop valid and useful measures of students' problem solving in academic subject areas.

The research focuses initially on the assessment of problem solving in science and mathematics for individual and groups of students. The project also will develop and try out professional development strategies to enable teachers to use the framework to improve their classroom teaching and assessment.

The project pursues its work through qualitative and empirical studies in three strands:

- The development and systematic study of a framework for assessing and understanding students' problem solving performance in science. Four types of tasks (and corresponding scoring schemes) that parallel investigations carried out by scientists have been identified so far: comparison tasks (compare two or more objects along the same dimension), a component identification (decompose a whole into its component parts), classification (classify a set of objects along a set of dimensions for a particular purpose), and observation (systematically observe and record data in time series investigations. Through experimental studies, the researchers are building both theory and practical assessment development technology by examining how variability in student performances arises over topics, over task types, over differences in task characteristics, over occasions, from one measurement method to another, and over differences in students' background and ability, including students with disabilities.

- Parallel development of a framework to guide an integrated approach to instruction and assessment to promote student learning. The framework is based on cognitive processes that occur across curriculum areas and provides benchmarks of increasing competency that can be used as the basis for assessment and teaching as well as providing a framework for validating the meaning of assessment results. The framework is being applied and validated in a set of qualitative studies of large scale science assessments at the national level. Collaborative work with teachers will commence in the next year to explore applications in classroom practice and options for professional development.

- The development of a systematic framework upon which to base the assessment of group and team problem solving. While large scale assessment programs have increasingly included collaborative small group as well as individual administration of problem solving tasks, the explicit purposes for such assessments are often not clearly articulated nor does current research offer much guidance on how group assessment should be constituted. Through qualitative and controlled, empirical study, this strand is examining the types of tasks which are most appropriate for group work and the factors which influence the group performance on tasks. Implications for the design of group assessments, group composition, and scoring are being explored.

Educational Significance of the Study: The project should have substantial impact on those responsible for the development of standards-based assessment systems and providing effective tools for increasing the alignment of standards, assessments, classroom instruction, and student learning. The models and frameworks provided by the project will provide practical guidance for the efficient development of assessments and instructional activities that can be used by test developers/publishers, states, districts, schools, and teachers across the country to increase the validity and utility of their efforts. Project models also are being applied and refined in the development of assessment systems in several states and large urban districts.

Status of Study and Products: To date, the project has produced a number of reports and articles:

- Baxter, G.P. & Glaser, R. (in press). *Cognitive analysis of science performance assessment.* Educational Measurement: Issues and Practice.
- Baxter, G.P. & Glaser, R. (in press). *A cognitive framework for performance assessment.* Manuscript submitted for publication.
- Fall, R., Webb, N., & Chudowsky, N. (1997). *Group discussion and large-scale language arts assessment: Effects on students' comprehension.* CSE Technical Report # 445. Los Angeles, California: Center for Research on Evaluation, Standards, & Student Testing (CRESST). Also, (in press) American Educational Research Journal.
- Webb, N. (Autumn 1997). *Assessing students in small collaborative groups.* Theory into Practice. 36:4.
- Webb, N.M., Baxter, G.P., & Thompson, L. (in press). *Teachers' grouping practices in elementary science classrooms.* Elementary School Journal.
- Webb, N.M., Nemer, K., Chiznik, A., & Sugrue, B. (1997). *Equity issues in collaborative group assessments. CSE Technical Report.* Los Angeles, California: Center for Research on Evaluation, Standards, & Student Testing (CRESST).
- Shavelson, R.J., Solano-Flores, G., & Ruiz-Primo, M.A. (in press). *Toward a science performance assessment technology.* Evaluation and Program Planning.

- Shavelson, R.J., Ruiz-Primo, M.A., Solano-Flores, G., Schultz, S., and Wiley, E. (1997). *Conceptual underpinnings for the design of performance assessments.* CSE Technical Report. Los Angeles, California: Center for Research on Evaluation, Standards, and Student Testing (CRESST).
- Shavelson, R.J., Ruiz-Primo, M.A., Solano-Flores, G., Schultz, S., and Wiley, E. (1997). *Concept-maps representation of knowledge structures.* CSE Technical Report. Los Angeles, California: Center for Research on Evaluation, Standards, & Student Testing (CRESST).
- Ruiz-Primo, M.A., & Shavelson, R.J. (1997). *Concept-map based assessment: On possible sources of sampling variability.* (Manuscript submitted for publication).

Project researchers also have made presentations to various national and international conferences.

Additional products will include articles for research and practitioner audiences on theory, findings, and guidance on assessment design and use, and professional development materials for teachers to help them use project frameworks to improve their classroom teaching and learning.

OERI Contact: David Sweet, 202–219–1748

Title of Study: The Politics of Assessment

Principal Investigator(s): Eva Baker, University of California, Los Angeles, CA

Program: National Educational Research and Development Centers: Center for Research on Evaluation, Standards, and Student Testing (CRESST)

Funding Level: $305,625. Year 1 $65,625; Year 2 $60,000; Year 3 $60,000; Year 4 $60,000; Year 5 $60,000

Project Period: 08/1/96–07/31/01

Project Design: Over the past 5 years political issues have assumed greater prominence in state and local testing programs. The growing politicization of assessment policy is particularly evident at the state level, and can be traced to two factors.

First, expectations about the policy purposes have expanded. Policy makers now consider testing a tool for accomplishing such goals as changing classroom instruction, not just for assessing student performance. This means that a single test is frequently used "often with high-stakes consequences" for a variety of purposes. This creates a tension between the technical requirements of a valid and reliable test and the uses of the results. Testing experts, who question the feasibility of such an approach, are frequently at odds with policy makers.

Second, testing has moved away from basic skills to broader curricular assessments. As this has occurred, value differences about what students should learn have come to the fore. The formulation of content standards and curricular frameworks, and the testing of students on those frameworks, has led to intense debate over what should be taught in the nation's schools and how student knowledge should be assessed.

These political debates may be healthy. However, they change how assessment needs to be studied. Research can no longer focus strictly on measurement and statistical issues and must, instead, examine the political issues surrounding testing.

The proposed research will focus on three key questions:

- What political factors are most significant in shaping the design and implementation of state assessment policies?
- How do these factors support or constrain the technical and administrative dimensions of state assessments?
- Under what conditions are state assessment systems most likely to be useful and credible to constituents, while still meeting technical standards for reliability and validity?

The study examines many of the same questions usually contained in implementation studies: By what processes are state assessment systems put into practice in schools and classrooms? What do assessments cost, and who pays? What level of technical assistance is provided, and how are teachers trained to use the results to improve student learning? However, this study goes beyond most other implementation studies by using a framework that assumes several political factors which are central to the process, that is,

- the degree of public and professional consensus about the functions of the assessment and the content to be tested,
- the concerns and strategies on key interest groups, and
- how the state chooses to structure the test development process.

Two research strategies are used in the study. The first is synthesizing data on the design and implementation of new student assessment systems in California, Kentucky, and North Carolina. Forty-five interviews were conducted with state officials and interest group representatives and 300 were conducted with local school administrators, teachers, and parents. More limited information is also being used for Arizona and Vermont. These five states were chosen because they have been struggling to implement new assessment systems. For example, in California, the state assessments were viewed by testing experts to be model, but they were vetoed by the governor after strong opposition to the content and format of the language arts test. In Kentucky, the assessment system has been the target of lobbying efforts to have it terminated or significantly modified. Second, the study will continue to monitor the implementation of assessment systems in which CRESST is conducting other studies or to which it provides technical assistance, i.e., Hawaii and Los Angeles.

Educational Significance of the Study: This study will increase our understanding of the dynamics among different assessment policies, the political and administrative context in which they are implemented, and their educational effects. For example, some attempts to implement new, more effective assessment and accountability systems have failed because teachers and parents do not understand assessment results.

Status of Study and Products: The study is underway and the first of the planned reports entitled *The Politics of State Testing: Implementing New Student Assessments* (1997), by Lorraine McDonnell is currently available. Among the findings are that resource commitments made by elected officials and time constraints they imposed shaped the implementation. Also, communication with and preparation of teachers is key to successful implementation.

Products will include a book-length manuscript examining state assessment systems as policy instruments designed to accomplish different objectives and operating under different assumptions. Differences include standards of technical quality, responses of students and teachers, costs, and sources of public support.

OERI Contact: David Sweet, 202–219–1748

Title of Study: Quality Education Indicators

Principal Investigator(s): Eva Baker, University of California, Los Angeles, CA

Program: National Educational Research and Development Centers: Center for Research on Evaluation, Standards, and Student Testing (CRESST)

Funding Level: $919,632. Year 1 $175,314; Year 2 $194,723; Year 3 $172,325; Year 4 $187,028; Year 5 $190,242

Project Period: 06/01/96–05/31/01

Project Design: Evaluation, accountability, and decentralization have combined to raise the public's expectation for information about the performance of its children and of its educational institutions. At present, much educational information is collected, but it is usually not well linked to important educational goals, synthesized to give a coherent picture, matched to policy options, or timed to meet practical constraints. Furthermore the anticipated public appetite for distributed information generated by personal computers and the Internet suggests that strategies for providing credible and accurate information should be found, and in particular, approaches to allow interested parties to answer questions on their particular concerns.

For example, many state-level systems only partially answer legitimate questions about school operations, educational attainment, and impact of policy efforts. For the most part, information is presented in relatively isolated studies, and additional information, such as the State's performance on external indicators, such as the AP tests have not been included. Secondly, because this information appears aperiodically, it is not clear that States have developed a coherent view of their strengths, weaknesses, and legitimate policy options derived from all available sources of information. Because the year-to-year trends are not well maintained, measuring progress is not often easy to accomplish.

At the school district level, there is great variation in capacity to collect information and large differences in the kind of information regularly offered to teachers and parents. At the school level, indicators of progress would be useful to evaluate success or failure of given reforms as well as to report to teachers, parents, and students.

The proposed research will focus on three key questions:

- How can data at the state, district, and school level be synthesized to assist the public, parents, school personnel, and parents in knowing educational quality?
- What technological supports can be provided at each level to provide information in a useful format without increasing burden to the system?
- Does the availability and credibility of information influence the public's engagement in educational planning?

Following a series of focus groups on what constituencies wished to know about education, a case study, using California has been designed. In this study, data from national and state sources will be synthesized annually and reported in a State Quality Educational Forum, supported by the leadership of government, academic, school, community, and business constituencies. After the first 2 years of the forum, there will be an attempt to forecast educational status. Web site and interface design for available databases will also be created and tested. Simultaneously, indicators at the District level (using Los Angeles as a site) will be developed for the public and for school use. These indicators will include composite measures of student performance, attendance, parent involvement, safety and security, and academic program. For small districts, database design and capacity building will be provided (in concert with the Annenberg Challenge) to assist in creating longitudinal databases. Impact will be measured by the use of responses to key items on an annual statewide education poll and by studying through data capture, observation, and interview, the uses made of these systems by various publics.

Educational Significance of the Study: This study will assist us in understanding the components of information systems that have impact on educational policy, practice, and general understanding. It will also add to technical knowledge on the creation of valid indicators of performance. In California, and elsewhere after system transfer, the study should help clarify the value of particular aspects of information and means to develop them in an economically feasible way.

Status of Study and Products: CRESST has conducted focus groups and developed technological supports (school electronic portfolio system in alpha version and first implementations of the Quality Education Forum Web site). This year a full school level indicator system will be developed and tried in Los Angeles and the specifications for district indicator systems and student databases will be created. Working with the editorial staff of the Los Angeles Times, we are anticipating the release this winter of a series of stories based on the trial integration of data from available sources. We have also collaborated on the initial design of a statewide poll on educational quality in California. This poll will be readministered to assess the impact of these systems on public engagement.

Products will include an annual synthesis of California education, and a report of proceedings of the forum. In addition, technical reports related to the design of indicators and electronic interfaces will be provided. Last, the software designed for schools to collect, analyze, and report their own data will also be available.

OERI Contact: David Sweet, 202-219-1748

Title of Study: Stakeholders' Understanding of Mathematics Assessments

Principal Investigator(s): Eva Baker, University of California, Los Angeles, CA

Program: National Educational Research and Development Centers: Center for Research on Evaluation, Standards, and Student Testing (CRESST)

Funding Level: $185,758. Year 1 $123,725; Year 2 $62,033

Project Period: 06/01/96 – 05/31/98

Project Design: Assessment practices in mathematics, as in other areas, are changing today in response to new standards for student performance that require complex thinking and problem solving as well as basic skills. Yet, very little is known about stakeholders' understandings of mathematics assessments. Information about students', teachers', administrators', and parents' understanding of key aspects of mathematics assessment will enable states, districts, and schools to design and communicate new assessments in ways that are consonant with the needs of educators, students, and their parents.

Our research proposed a coordinated set of studies to clarify teachers', principals', and students' perspectives on mathematics assessment, including their views on traditional norm-referenced assessment, newer performance assessments and other forms of classroom assessment (i.e., unit tests, quizzes). Using surveys, interviews, and focus groups, the study investigates:

- What are stakeholders' interpretations of the purposes, utility, and validity of mathematics assessments?
- How do various stakeholders understand and interpret content and performance standards?
- How do stakeholders understand and interpret assessments for limited-English proficient students and students with disabilities?
- How do stakeholders communicate their understandings?
- How are understandings influenced by context (e.g., district and school reform policies, professional development, and demographics)?

Educational Significance of the Study: Research findings will provide local and state education agencies and administrators with important information on stakeholders' understandings and uses of mathematics assessments, as well as important evidence of the factors which have promoted greater consensus. Publications for teachers will provide key examples of the ways that differences among teachers' as well as students' understandings of assessment can influence the utility and validity of assessment findings. The final project synthesis is intended to advance theory and practice with an integrative framework for understanding how stakeholders at the school level understand, choose, and utilize mathematics assessments for diverse populations.

Status of Study and Products: The project developed a preliminary framework for mathematics assessment and has conducted initial, small-scale surveys, interviews, and focus groups with students, teachers, and administrators. Two project reports are available:

Gearhart, M., Saxe, G.B., & Franke, M. (in press). *Principals' views of mathematics standards, frameworks, and assessment in a context of reform.* CSE Technical Report. Los Angeles, California: Center for Research on Evaluation, Standards, & Student Testing (CRESST).

Saxe, G.G., Franke, M.L., & Gearhart, M. (1997). *Teachers' shifting assessment practices in the context of educational reform. CSE Technical Report.* Los Angeles, California: Center for Research on Evaluation, Standards, & Student Testing (CRESST).

OERI Contact: David Sweet, 202–219–1748

Title of Study: Validity of Interpretations and Reporting of Results

Principal Investigator(s): Robert Mislevy, ETS, Princeton, NJ

Program: National Educational Research and Development Centers: Center for Research on Evaluation, Standards and Student Testing

Funding Level: $305,404. Year 1 $65,565; Year 2 $59,659; Year 3 $60,078; Year 4 $60,192; Year 5 $59,910

Project Period: 6/1/96–5/31/01

Project Design: Our present educational assessments are based on mental measurements developed in the early part of this century, largely the measurement of student acquisition and retention of very broad and disparate pieces of information or formula-driven processing skills. Assessment has failed to maintain pace with significant advances in cognitive, educational and developmental psychology which suggest much broader and deeper levels of how students learn. The inferences made from assessment have been similarly narrow, raising important questions of how we might better collect and interpret evidence of student knowledge and how to communicate the results to multiple audiences.

The objectives of this project are to illustrate and explain the conceptual underpinnings for the next generation of educational assessments. The challenge is to establish methods and procedures for assessment that are both grounded in principled reasoning and integrate our understanding of how students learn and develop knowledge and skills. The following questions are being studied:

- What kinds of evidence are needed to support inferences about student performance? How much faith can be placed in the evidence, and in the ensuing statements?
- What must users of assessment data know for summary results to be useful?
- How must we structure assessment so results will be credible?
- Procedures that more fully model student learning will be developed and researched through data collection, analysis, and review of the procedures.

Educational Significance of the Study: Most assessment development efforts start with either general descriptions of the skills to be measured, then defined operationally by test items, or from exemplar tasks from which the proficiency is defined. In our work on a new Educational Testing Service (ETS) evidence-based reasoning assessment, Portal, we have developed successful assessments by bridging the gap so that both sides, (tasks and proficiencies) are well defined in terms of one another and connected through the evidence structure. We believe that such an approach lends itself well to a standards-based assessment system and may make important contributions to 21st century assessments.

Status of Study and Products: Deliverables have been submitted to CRESST supporting evidentiary reasoning in the design of complex assessments. The deliverable, Graphical Models and Computerized Adaptive Testing is in the CRESST distribution system and the research is an invited submission to Applied Psychological Measurements special issue on computerized adaptive testing. A research memorandum titled *A Note on Knowledge-Based Model Construction in Educational Assessment* has been submitted to both the CRESST and ETS research report series. Various presentations on the research have been made and more are expected in the near future.

OERI Contact: David Sweet, 202–219–1748

Title of Study: Validity of Measures of Progress

Principal Investigator(s): Bengt MuthÄn and Michael Seltzer, University of California, Los Angeles, CA; David Rogosa, Stanford University, Palto Alto, CA; Bob Linn, University of Colorado, Boulder, CO; David Wiley, New Standards Project, LRDC, PA, GaySu Pinnell and Tom Romberg, University of Wisconsin, Madison, WI; and Lauren Resnick, LRDC, Pittsburg, PA

Program: National Educational Research and Development Centers: Center for Research on Evaluation, Standards and Student Testing

Funding Level: $808,084. Year 1 $166,159; Year 2 $154,443; Year 3 $155,128; Year 4 $165,434; Year 5 $166,920

Project Period: 6/1/96–5/31/01

Project Design: The analysis and reporting of progress, whether the progress of individual students or of institutions, is a vital aspect of the assessment process and essential to nearly all accountability systems. Unfortunately, most statistical methods fail to properly account for behavioral growth over time or for different skills being measured. Increases in reading skills for early readers, for example, may reflect increasing vocabulary skills and word recognition while increases at higher grade levels may be more indicative of students ability to derive meaning from text. Reporting global scores, therefore, fails to help educators identify specific student strengths and weaknesses and consequently, instructional strategies cannot be applied where they will do the most good.

Accuracy in reporting group scores is equally problematic. Traditional techniques usually report a simple arithmetic mean or median and annual changes from this simple measure of central tendency. However, movement to a standards-based learning environment requires knowledge as to what degree groups are meeting multiple educational standards. Dependable techniques for reporting standards-based results are in very short supply.

To monitor and report the longitudinal progress of students which account for changes in students developmental growth, CRESST researchers are using a methodology called growth modeling. The project is also exploring ways to use other procedures, such as piece-wise models, to obtain a better understanding of change processes which occur during specific program treatments.

Another major purpose of this study is to investigate alternative summaries for the performance of groups, such as schools. Researchers are reporting the proportion of group members scoring above a stated cut-off (i.e., above a performance criterion or benchmark) as one method for reporting standards-based performance.

Educational Significance of the Study: Improved methods for reporting individual student scores that account for changes in student growth, should enable teachers and educators to identify individual students who need help more easily and apply appropriate instructional strategies. In the second part of this project, data from major educational assessments and assessments systems, such as NAEP, Kentucky, Maryland, and California, will be used to demonstrated the feasibility of new assessment reporting methods. Valid methods for reporting attainment towards multiple sets of standards and at multiple levels are clearly essential if the standards-based movement is to achieve success.

Status of Study and Products: Several papers using growth curve modeling have been completed, demonstrating the feasibility of this method for monitoring progress of student achievement over time. Data from Dr. David Francis reading program and his Houston normative reading study are being used to analyze deviations from normal reading development. This research holds promise for eventually developing an early warning system of insufficient reading skills that result in reading failure. In the second part of the study, a computational tool for longitudinal data analysis, Timepath97, has been completed. The deliverable, Summarizing Group Processes Using Proportion Above Cut-off Measures, will soon be available in draft form.

OERI Contact: David Sweet, 202-219-1748

National Center for Improving Student Learning and Achievement in Mathematics and Science (NCISLA)

Title of Project: National Center for Improving Student Learning and Achievement (NCISLA) in Mathematics and Science—Center Overview

Principal Investigator(s): Thomas A. Romberg, University of Wisconsin; Associate Directors: Angelo Collins, Richard Lehrer, and Walter Secada

Program: National Educational Research and Development Centers

Funding Level: $12,500,000. Year 1 $2,500,000; Year 2 $2,500,000; Year 3 $2,500,000; Year 4 $2,500,000; Year 5 $2,500,000

Project Period: 3/01/96–2/28/01

Center Mission and Focus: The mission of the National Center for Improving Student Learning and Achievement in Mathematics and Science (NCISLA) is to craft, implement in schools, and validate a set of principles for the design of classrooms that promote understanding in both mathematics and science.

The need to create a set of design principles grows out of the long standing concern about the teaching and learning of mathematics and science in our schools. Over a decade ago, the need for reform in classroom practices was brought vividly to the attention of the United States public with the publication of *A Nation at Risk and Educating Americans for the 21st Century*. In 1983 the authors of those documents claimed that competing in today's global economic environment depends on a workforce knowledgeable about the mathematical, scientific, and technological aspects of the emerging information age. They argued that our schools are not adequately preparing very many of our students in mathematics or science in ways that will enable them to participate meaningfully in the real world of work, personal life, and higher education, and in the country's social and political institutions. In particular, in our increasingly multicultural society, both the participation and achievement of women and minorities in mathematics and science lags behind that of white males.

Accomplishing such change requires redesigning the curriculum and instructional procedures for both school mathematics and school science. The challenge being faced by NCISLA is to create classrooms in which all students have the opportunity to develop an understanding of mathematics and science. Only through the development of such classrooms can real change in the teaching and learning of mathematics and science occur.

Change has not yet occurred in the classrooms partly because past research identified problems, and the reform rhetoric has concerned goals, not the means to attain them. Determining the means, developing principles of appropriate classroom design, requires the gathering and documenting of reliable information, and is the role of the research centers.

Central to the mission of NCISLA is the belief that there is a direct and powerful relationship between student understanding and student achievement—that the high expectations we have for all students rests on their understanding of important mathematical and scientific ideas taught in school classrooms by professional teachers. Given this belief, eight closely related questions guide the investigations being conducted by Center researchers:

- How is learning for understanding in both school mathematics and school science best characterized?
- What are the important ideas in both school mathematics and school science that we expect students to understand?
- What are the critical instructional features in classrooms that promote understanding for all students?
- What is the appropriate role for teachers in such classrooms, and how can they be helped to effectively assume that role? How can these changes in teachers' beliefs and practices be made self-sustaining?
- What is the impact of students' understanding of the important ideas in mathematics and science on their achievement? What information can be collected to demonstrate that students have grown in their understanding of important ideas in both disciplines and demonstrate high levels of achievement?
- What organizational capacity, in the school and larger community, is required to support and sustain the development of classrooms that promote understanding?
- How can we ensure the equitable distribution of opportunity, to all students, to learn mathematics and science with understanding?
- What strategies are effective in providing both information about research findings and support to policymakers, school administrators, and teachers so that they can create and support classrooms that promote understanding in mathematics and science?

Educational Significance of Center Work:

As a consequence of this research agenda we expect to:

- identify a set of design principles,
- demonstrate in a set of classrooms the impact of the design principles on student achievement,
- clarify the organizational context of schools that supports teaching for understanding,
- identify a set of instructional processes that can be used to develop an emerging theory of instruction, and
- create strategies to provide both information and procedures for policymakers, school administrators, and teachers so that they can use our findings to create similar classrooms.

OERI Contact: Wanda Chambers, 202–219–2035
Ram Singh, 202–219–2025

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Title of Study: A Study of Assessment and Achievement Learning in Mathematics and Science Classrooms

Principal Investigator(s): Thomas Romberg and Richard Lesh, University of Wisconsin-Madison, WI; Angelo Collins, Vanderbilt University, Nashville, TN; Edward Silver, LRDC, Pittsburgh, PA; and Jan de Lange, Freudenthal Institute, The Netherlands

Program: National Educational Research and Development Centers: National Center for Improving Student Learning and Achievement in Mathematics and Science

Funding Level: $560,000. Year 1 $112,000; Year 2 $112,000; Year 3 $112,000; Year 4 $112,000; Year 5 $112,000

Project Period: 03/01/96–02/28/01

Project Design: The frameworks of national and international tests such as the National Assessment of Educational Progress (NAEP) and the Third International Mathematics and Science Study (TIMSS) have attempted to determine general levels of performance in mathematics and science. Unfortunately, evidence from such general indicators is of limited use by teachers in their classrooms. Current studies make it clear that teachers in most mathematics and science classrooms only use a limited set of evidence either to make instructional decisions or to judge student performance. Information is now needed about how well students understand the important ideas in mathematics and science and how to determine their progress toward understanding mathematics and science over time.

A student's understanding of important ideas in mathematics and science must be inferred as a consequence of the student's performance on a variety of tasks. The validity of such inferences is the major theme of this project. This project's work points to a need for teachers to understand and to reflect on content and performance goals, credible evidence about student achievement related to those goals, and methods of documenting such evidence. Three assessment questions have emerged from the instructional design work of the Center. As descriptions for specific domains in mathematics and science are mapped the questions are:

- For a map of a particular domain, what are reasonable benchmarks that could be used to document student progress from informal to formal ideas in that domain?
- How can we help teachers judge student growth over time in a particular domain, and use that information to make instructional decisions?
- Can adequate psychometric procedures be identified (or developed) that researchers can use to document and justify assertions about growth over time?

As domains being studied in the design sites are being mapped, an assessment framework is being developed to specify benchmarks in such domains as "data and statistics," "prealgebra," "evolutionary biology." The framework includes specification of student knowledge in domain at three levels: knowledge of important concepts (facts, terms); knowledge of how these concepts are related; and use of that knowledge in nonroutine problem situations. This is the first step in the process of establishing validity (face validity).

To investigate the second question, a set of studies is being conducted which involves observing, listening, and asking questions of students as they engage in instruction to document the actual behavior of students in relationship to the mathematical or scientific ideas and contrast that with the expected behavior or indicators. It is at this step that the initial benchmarks are modified and a more complex model of behavior is established for the revised criteria (construct validity). The sequence of investigations then separates into two avenues of work. One line of study investigates how teachers use (or fail to use) the several sources of evidence either to make instructional decisions or to judge student progress toward the performance criteria (consequential validity).

The second line of work involves creating a set of tools that teachers and others can use to document performance and growth toward the benchmarks. The tools being developed include a variety of assessment tasks designed to elicit specific behaviors, observations and interview schedules, ways of recording evidence, techniques for organizing and scaling specific forms of evidence (e.g., portfolios), and so forth. Studies are now being done to examine the utility of some of these specific tools in relationship to the benchmarks and more traditional indicators of growth (concurrent validity).

The current studies are being conducted in both mathematics and science at each of the three-grade levels. The sites are Verona, Wisconsin (both elementary and middle school, mathematics and science); Providence, Rhode Island (middle school mathematics); Milwaukee, Wisconsin (secondary mathematics), Monona Grove, Wisconsin (secondary science), and Cambridge, Massachusetts (elementary science).

For the third question, a meeting on the psychometrics of assessing growth will be held in conjunction with CRESST. A plan will be developed, and next steps (including possible commissioned papers) will be determined.

Educational Significance of the Study: The work of the project entails developing new assessment instruments, creating methods of documenting student growth in understanding important ideas in mathematics and science, and demonstrating the relationships between indicators of student understanding and achievement in conventional and alternative assessments. This collective body of knowledge will help to improve our understanding about the ways to document student growth and achievement, including documenting student achievement over time. Furthermore, the work should provide tools which teachers can use to monitor student progress toward important goals in mathematics and science.

Status of the Study and Products: Working group meetings have been conducted that provide a framework for assessment and achievement studies at the elementary, middle, and high school levels. Products will be prepared in a variety of forms which include assessment instruments, validity studies, and research reports. One validity study at the middle school level is underway that involves the collaboration of researchers from the Fredenthal Institute in Utrecht, The Netherlands, from a United States-based office. A partial listing of papers follows:

DeLange, J. (1997). *Looking through the TIMMS-mirror from a teaching angle.* Unpublished paper.
Gravemeijer, K. & Seegers, G. (December 1996). *Implementation and effect of realistic education.* Paper presented at the Symposium on the Role of Contexts and Models in Mathematics Learning, Leiden, The Netherlands.

Shafer, M. & Romberg, T. A. (in press). Assessment in Classrooms that Promote Understanding. In E. Fennema & T. A.. Romberg (Eds.), *Mathematics classrooms that promote understanding.* Mahway, NJ: Erlbaum Publishers.

Zawojewski, J.S. & Silver, E. A. (1997). Assessing Conceptual Understanding in G. W. Bright & J. Joyner (Eds.), *Classroom assessment in mathematics K–12: Proceedings of a working conference.*

OERI Contacts: Wanda Chambers, 202–219–2035
Ram Singh, 202–219–2025

Title of Study: Improving Teaching and Learning in High School Classrooms: A Collaboration Between Teachers and Researchers

Principal Investigator(s): Walter Secada, James Stewart, and Thomas Carpenter, University of Wisconsin-Madison, WI; Ricardo Nemirovsky and Tracy Nobel, TERC, Cambridge, MA; Peter Hewson, Cleveland Heights, OH; and Darleen Davies, Cleveland, OH

Program: National Educational Research and Development Centers: National Center for Improving Student Learning and Achievement in Mathematics and Science (NCISLA)

Funding Level: $1,369,690. Year 1 $245,631; Year 2 $288,137; Year 3 $297,625; Year 4 $302,541; Year 5 $235,756

Project Period: 03/01/96–02/28/01

Project Design: Students exiting high school largely perform at basic levels, oftentimes resulting in remedial education in colleges or by employers. The National Assessment of Educational Progress (NAEP) 1996 mathematics data indicate that 69 percent of 12th-graders perform at or above the basic level, 16 percent perform at or above the proficient level, and only 2 percent perform at the advanced level. The NAEP 1996 science data indicate that 7 percent of 12th-graders perform at or above the basic level, 21 percent at or above the proficient level, and 3 percent at the advanced level. Another indicator, *The Condition of Education 1997*, states that a large percentage of graduating 12th-graders still do not take challenging mathematics. Only 66.4 percent of students in high school take algebra I, 70.4 percent take geometry, 17.3 percent take analysis/precalculus, and only 9.2 percent take calculus. With respect to science, 93.5 percent of student take biology, 56 percent take chemistry, and 53 percent take a combined course in chemistry and biology, 24.4 percent take physics, and 21.3 percent take a combined course in biology, chemistry, and physics. Moreover, what TIMSS results indicate is that what is particularly important is the content of the course, depth, and breadth of the curriculum. In comparison to other industrialized nations that out-perform the United States, our school mathematics and science tends to be "a mile wide and an inch deep."

This project examines ways to improve classroom teaching and learning in secondary school mathematics and science. The principle methodology of the project involves addressing key questions in case studies in classroom settings involving teachers, individual students, and student groups. The goal of the study is to work collaboratively with teachers and schools to design instruction that help foster our understanding of what it means for students to know and understand rich and important ideas in mathematics and science.

This study is being conducted in high schools located in Boston, Massachusetts (mathematics), Monona Grove, Wisconsin (science), and Metropolitan Milwaukee (mathematics). The project involves designing appropriate instruction and curriculum sequences, analyzing case studies, defining appropriate collections of achievement data, and building theory through empirical research studies. In particular, researchers work with teachers to design new and more effective instructional environments, replicate these environments across several classrooms and schools, and document student achievement. The key research questions are:

- How is learning for understanding in both school mathematics and school science best characterized? What are the important ideas in both school mathematics and school science we expect students to understand? What are the critical instructional features in classrooms that promote understanding for all students?

- What is the appropriate role for teachers in classrooms? How can they be helped to effectively assume their appropriate role? What is the impact of the students' understanding of the important ideas in mathematics and science on their achievement?

- What organizational capacity, in the school and larger community, is required to support and sustain the development of classrooms that promote understanding?

Educational Significance of the Study: This work will lead to developing a set of principles to design high school classrooms and organizing schools and components of the community that promote students' understanding of important and rich ideas in mathematics and science. The principles of instructional design can add to our understanding of appropriate organizational features of schools that support such classrooms, including instructional practices affected by teachers' roles and our understanding of the effective ways assess student achievement. The work of this project can lend itself to devising a theory of instruction for mathematics and science that could improve student achievement and student understanding, as well as suggest changes in our knowledge base about what kinds of learning and instruction can take place in classrooms, and at which grade levels.

Status of the Study and Products: Substantial work has been conducted in contacting and connecting with schools and classrooms in diverse regions of the country which will be used to replicate work across sites. Also, students and teachers of varying demographic populations have been identified. Data gathering instruments are being developed which include: interview protocols for teachers, principals, and other school personnel; student assessments; and classroom observation protocols and procedures. Instruments are being pilot-tested and initial baseline data is being gathered. A partial listing of products follows:

Johnson, S., & Steward, J. (1997). *Students as scientists: strategies used by high school students during model-revising problem solving*. Unpublished manuscript

NCISLA Functions Study Group. (1997). *Mathematical functions* (versions A–1, A–2, B–1, B–2, C). Madison, WI: National Center for Improving Student Learning and Achievement in Mathematics and Science, Wisconsin Center for Education Research.

Rudolph, J. & Stewart, J. (1997). *Evolution and the nature of science: On the historical discord and its implications for education*. Unpublished manuscript.

Solomon, J., Nemirovsky, R., Noble, T., Wagoner, P., and Cook, J. (1997). "*How come you never told us that?": The role of classroom discourse in developing classroom standards for proof*. Unpublished manuscript.

Stewart, J., & Rudolph, J. (1997). *Rethinking scientific problems and student problem solving*. Unpublished manuscript.

OERI Contact: Wanda Chambers, 202–219–2035
Ram Singh, 202–219–2025

Title of Study: A Study of Organizational Support in Mathematics and Science Classrooms

Principal Investigator(s): Adam Gamoran and Walter Secada, University of Wisconsin-Madison, WI; Cora Marrett and Pamela Quiroz, University of Massachusetts, Amherst, MA

Program: National Educational Research and Development Centers: National Center for Improving Student Learning and Achievement in Mathematics and Science

Funding Level: $205,000. Year 1 $41,000; Year 2 $41,000; Year 3 $41,000; Year 4 $41,000; Year 5 $41,000

Project Period: 03/01/96–02/28/01

Project Design: A critical shortcoming of efforts to reform classroom organization is a lack of measurable improvement in student achievement. School reform research finds that reform occurs in isolated cases and that authentic schoolwide instructional reform occurs less often. Research is needed to explore the connections between classroom instruction, school organization, and student achievement.

This project examines mathematics and science classrooms and school design principles at the elementary, middle, and high school levels. This project seeks to identify conditions outside the classroom that allow for more effective classroom instruction. The work of the project entails development of a teacher survey instrument correlated to indicators based on the Schools and Staffing Survey (SASS) and incorporating survey design from other sources including the Center on Organization and Restructuring Schools, the Center of the Context of Secondary School Teaching, the Consortium for Policy Research in Education, and the Chicago Systemic Initiative. This study survey includes four parts: teacher background, the schools as workplace (organizational context), mathematics and science teaching and learning, and professional development. Interview protocols examine in depth social relationships affecting students, teachers, classrooms, schools, and communities. This survey is currently administered to elementary school classrooms in Verona, Wisconsin, and Cambridge, Massachusetts; subsequent survey administration will be at the middle and high school grade levels.

Issues addressed by this study include: the development of teachers' professional communities; the relationship between teachers' professional communities and their efforts to build effective classrooms; the relationship between professional development and the development of a professional community; teachers' professional identity within a professional community; the role and location of visionary leadership; the balance between school-level autonomy and pedagogical issues and accountability; school governance; and the role of nonschool agents and agencies such as parents, school districts, and researchers, and their impact on developing classrooms that focus on teaching and learning rich and important ideas in mathematics and science. Research is guided by two questions:

- What organizational capacity—in the school and larger community—is required to support and sustain the development of classrooms that promote student understanding of important ideas in mathematics and science?

- What strategies are effective in providing information and support to policymakers, school administrators, and teachers so they utilize findings to create and support classrooms that foster students' understanding of important ideas in mathematics and science?

Educational Significance of the Study: This study will identify the contextual factors that allow schoolwide innovative changes in instructional approaches and will therefore lead to a new understanding of the conditions—in and out of classrooms—that promote effective teaching, learning, and improved student achievement.

Status of the Study and Products: Work has been conducted in the following areas: conceptual development, survey development, interview development, and analysis of existing data. Several papers have been drafted which include the following:

Algebra for everyone? Benefits of college-preparatory mathematics for students with diverse abilities in the early secondary school. Unpublished manuscript.

The organizational context of teaching and learning. Unpublished manuscript.

The impact of high school academic preparation on labor market success. Unpublished manuscript.

OERI Contacts: Wanda Chambers, 202–219–2035
Ram Singh, 202–219–2025

Title of Study: Teacher—Researcher Collaborations to Improve Elementary School Mathematics and Science Instruction

Principal Investigator(s): Richard Lehrer and Leona Schauble, University of Wisconsin-Madison, WI; Ann Rosebery and Beth Warren, TERC, Cambridge, MA

Program: National Educational Research and Development Centers: National Center for Improving Student Learning and Achievement in Mathematics and Science

Funding Level : $3,516,818. Year 1 $703,364; Year 2 $703,363; Year 3 $703,363; Year 4 $703,363; Year 5 $703,363

Project Period: 09/01/96–08/31/01

Project Design: American students are not introduced to challenging mathematics at early ages. The Third International Mathematics and Science Study (TIMSS) fourth-grade data indicate that the United States students exceed the international average in whole numbers, fractions, and proportionality; data representation, analysis, probability; geometry; and patterns, relations, and functions. Fourth-grade students fall below the international average in measurement, estimation, and number sense. By the time they reach eighth grade, however, TIMSS data indicate that students score below the international average: performance is about average in algebra, data representation, analysis, and probability, and fraction and number and students perform more weakly in geometry, measurement, and proportionality. NAEP 1996 data reveal that 64 percent of the nation's 4th-graders perform at or above the basic level, with only 21 percent performing at or above the proficient level and 2 percent at the advanced level.

This project examines ways to improve classroom teaching and learning in elementary school mathematics and science. Gaining information about instructional designs that teach important and rich ideas in mathematics and science to children at earlier ages is key to this exploration. Another key consideration is how to effectively relate student understanding of important ideas to student achievement. The primary approach taken is to gain insight about how students learn and understand important and rich ideas at earlier grade levels and how this can lead to an increase in students' understanding of complex ideas and improved student achievement at subsequent levels.

Investigators design, implement, and test innovations and assessments that show how deeply students understand what they know and learn. Variables being examined are: instruction and teaching, including curriculum; assessing what learners know and understand; professional development; and building supportive organizational structures in elementary schools. The work is undertaken in two phases. The first phase involves designing innovative ways and new approaches to classroom instruction, preparing the ideas for pilot testing in elementary classrooms, studying the effects of the ideas and the reactions to them, and revising the innovations. The second phase involves testing the innovations and replicating these environments across several classrooms and schools that include students from a varying demographic backgrounds with varying ranges of achievement levels.

Data at both phases will be collected in a variety of forms to create a common database for analysis within and across grade levels. Currently in its first phase, the work of this project is being conducted in grades 1–5 classrooms in Verona, Wisconsin and Cambridge, Massachusetts. Researchers collaborate with approximately 40 elementary grade teachers in 5 building sites in Verona. Work of the Cambridge site is being coordinated through the Cambridge Teacher Research Seminars (CTRS) and primarily involves the participation of 22 teachers of minority and language-minority students. The key research questions are:

- How can we best characterize student learning of important and rich ideas in school mathematics and school science, how do we characterize student thinking and reasoning about these rich ideas to give us information about how well or deeply they understand them, and what is the impact on achievement over time as students develop understanding of important ideas?

- What are the critical instructional features in elementary classrooms that promote deep and rich understanding of the important ideas, what is the appropriate role for teachers in such classrooms and how can they be helped to effectively assume that role, and how can important changes in teachers' beliefs and practices be made to implement these innovative instructional features?

- How can the school and larger community be organized to support the development of elementary classrooms that promote students' development of deep and rich concepts and ideas?

Educational Significance of the Study: This work will lead to developing a set of principles to design elementary classrooms and organizing schools and components of the community that promote students' understanding of important and rich ideas in mathematics and science. The principles of instructional design can add to our understanding of appropriate organizational features of schools that support such classrooms, including instructional practices affected by teachers' roles and our understanding of the effective ways assess student achievement. The work of this project can lend itself to devising a theory of instruction for mathematics and science that could improve student achievement and student understanding, as well as suggest changes in our knowledge base about what kinds of learning and instruction can take place in classrooms, and at which levels. Potential significance of the study also entails generation of the following:

- Demonstrating the impact of the design principles on student achievement;

- Clarifying how elementary schools can be organized to support teaching important and rich ideas in mathematics and science; and

- Finding ways to provide both information and procedures for teachers, school administrators, and policymakers so that they can use and implement these research and design-based findings to create and sustain such classrooms.

Status of the Study and Products: The project is currently in its first phase. A partial listing of products follow:

Lehrer, R., & Schauble, L. (1997). *Modeling in mathematics and science* (MIMS). Unpublished manuscript.

Rosebery, A.S., & Puttick, G.M. (1997). *Teacher professional development as situated inquiry: A case study in science education.* Unpublished manuscript.

MIMS Booklet—Spring 1997, Parts 1 and II, Grades 3–5 (drafts).

MIMS Booklet—Spring 1997, Parts I and II , Grades 1 & 2 (drafts).

MIMS Number Interview, Grade 2 & Grades 3–5 Spring 1996–1997, Student Workbook (drafts).

HyperMeasure CD (draft).

OERI Contacts: Wanda Chambers, 202–219–2035
Ram Singh, 202–219–2025

Title of Study: A Study of Instructional Design in Mathematics and Science Classrooms

Principal Investigator(s): Richard Lehrer, Leona Schauble, and Thomas Carpenter, University of Wisconsin-Madison, WI; Ann Rosebery, TERC, Cambridge, MA; Angelo Collins and Paul Cobb, Vanderbilt University, Nashville, TN; Richard Lesh and James Kaput, University of Massachusetts, Dartmouth, MA

Program: National Educational Research and Development Centers: National Center for Improving Student Learning and Achievement in Mathematics and Science

Funding Level: $205,000. Year 1 $41,000; Year 2 $41,000; Year 3 $41,000; Year 4 $41,000; Year 5 $41,000

Project Period: 09/01/96–06/31/01

Project Design: The 1993–94 Schools and Staffing Survey (SASS) reported that teachers in grades 1–3 spend 5.3 hours teaching mathematics and 2.9 hours teaching science per week. Teachers in grades 4–6 spend 5.1 hours teaching mathematics and 3.5 hours teaching science per week. The question remains, what is the actual content of the instruction. This query leads to the need for research to determine the appropriate course content and how can it be effectively designed for each grade level as well as the range of effective instructional practices for each grade.

The work of this project examines mathematics and science instruction design principles at elementary, middle, and high school levels. This project connects and synthesizes key findings from existing bodies of research and findings from what works in designing and implementing classroom instruction. Investigators seek to identify gaps in our knowledge or explore diverse approaches and sometimes contradicting findings in order to design a set of principles for constructing classrooms that promote student understanding of rich and important ideas in mathematics and science. The primary methodology used in this project is research synthesis studies. The work of this project involves commissioning papers, identifying key aspects of a coordinated research impacting the Center and the field at large, sponsoring conferences, producing scholarly products, and creating nontechnical synthesis products for practitioners, policymakers, and other interested audiences. Key questions are the following:

- What are the critical instructional features in classrooms that promote understanding for all students, and how can we ensure the equitable distribution of opportunity to learn mathematics and science?
- What strategies are effective in providing both information and support to policymakers, school administrators, and teachers so they utilize the findings to create and support classrooms deep and rich understanding of the important ideas in mathematics and science?

Educational Significance of the Study: This work will lead to developing a set of principles to design classrooms that promote students' understanding of important and rich ideas in K–12 mathematics and science. Crosscutting information will be gained about how reasoning, facilitating classroom dialogue/interactions, making meaningful representations of mathematical and scientific ideas, and understanding "big ideas" in mathematics and science impact teaching and learning and how they can be appropriately engaged to help increase student understanding and achievement.

Status of the Study and Products: Several working conferences have been conducted that involved researchers and others from various research or practice perspectives from across the nation. Several publications are planned as well as products especially designed for practitioners which provides a guide for the translation of research into practice. A list of current products follow:

Forman, E.A., & Larreanmendy-Joerns, J. (1997). *Making explicit the implicit: Classroom explanations and conversational implicatures.* Unpublished manuscript.

Forman, E.A., Larreanmendy-Joerns, J., Stein, M. K., & Brown, C. (1997). "You're going to want to find out which and prove it": Collective argumentation in mathematics classrooms. Unpublished manuscript.

Larreanmendy-Joerns, J., & Forman, E.A. (1997). *Argument analysis: Helping teachers construe classroom discourse.* Unpublished manuscript.

OERI Contacts: Wanda Chambers, 202–219–2035
Ram Singh, 202–219–2025

Title of Study: A Study of Professional Development in Mathematics and Science Classrooms

Principal Investigator(s): Thomas Carpenter, Richard Lehrer, and Leona Schauble, University of Wisconsin-Madison, WI; Angelo Collins, Vanderbilt University, Nashville, TN; Megan Franke, University of California, Los Angeles, CA; Ann Rosebery and Beth Warren, TERC, Cambridge, MA

Program: National Educational Research and Development Centers: National Center for Improving Student Learning and Achievement in Mathematics and Science

Funding Level: $205,005. Year 1 $41,000; Year 2 $41,000; Year 3 $41,000; Year 4 $41,000; Year 5 $41,000

Project Period: 03/01/96–02/28/01

Project Design: School reforms can impact teachers' daily classroom life, and considerations need to be given to the connection between instructional reform and teacher training. *The Condition of Education, 1997* reports that 64.4 percent of teachers during the 1993–94 school year participated in professional development topics that provided information about methods of teaching in specific subject fields and 30.1 percent participated in activities that provided an in-depth study in a specific field. An increased understanding of profession development and what it means to create and maintain a professional community of teachers is critical. Current reform efforts in science and mathematics require alternative forms of professional development so that teachers become problem poser and problem solvers in schools that are places for teachers to engage in inquiry and continue to learn. As noted in *Science and Engineering Indicators—1996*, research in this area is much needed, but it is only now beginning and is greatly affected by classroom and school organization policies.

The work of this project examines mathematics and science professional development at elementary, middle, and high school levels. This project connects and synthesizes key findings from existing research and from practice as well as engaging in studies of specific professional development programs. Investigators are concerned with identifying critical principles of professional development that contribute to helping teachers make the fundamental changes in beliefs, knowledge, and practice that are call for in order for teachers to transform their classrooms into environments that promote students' understanding of important ideas in mathematics and science. A primary goals of the project is to construct a conceptual basis for designing professional development programs that go beyond training teachers to implement specific practices and provide a basis for continued learning and growth. A major focus of the work is to identify principles of professional development that lead to teacher change that is self sustaining and generative once the teacher development program is completed.

One primary methodology used in this project is synthesis of research and practice that leads to fundamental change in teachers' practice and beliefs that are consistent with the goals of promoting students' understanding of science and mathematics. A conference will be held and papers commissioned to contribute to this synthesis. Longitudinal studies of teachers in professional development programs are being conducted to study how to help teachers change in ways that are self-sustaining and generative. Key questions are the following:

- How can teachers transform classrooms into environments that promote students' understanding of important and rich ideas in mathematics and science?

- What is the appropriate role for teachers in such classrooms, and how can they be helped to effectively assume that role? How can important changes in teachers' beliefs and practices be made to implement these innovative instructional features?

- How does professional development result in increased teacher knowledge, changed beliefs, and practices; how can professional development promote equitable practices; and how can changes in teachers beliefs and practices be made self sustaining and generative?

Educational Significance of the Study: This study seeks to identify ways to help teachers to change beliefs and practices that help them to create classrooms that effectively engage students in a deep and rich understanding of mathematics and science. Often preservice instruction and inservice professional development practices do not provide teachers with the appropriate level or amount of information needed for them to effectively transform new ideas or information into practice. Research studies indicate that the relationships among beliefs, knowledge, and practice are quite complex and much is left to be understood about how teachers change their beliefs with corresponding changes in practice. This study hopes to gain insight about how to sustain effective change in professional development practices that lead to positive changes in how to help teachers negotiate the shift from conventional classrooms to classrooms that foster students' deep understanding of key ideas in mathematics and science.

Status of the Study and Products: A longitudinal study of 24 teachers has been completed that characterizes the long-term effects of professional development and the qualities of teacher's knowledge, beliefs, and practices that make their change self-sustaining and generative. A study of 40 elementary school teachers participating in a case-based teacher development program has been complete, and a 3-year study of 37 teachers in an urban elementary school that extends the initial study was started in September 1997. Studies of the development of elementary children's algebraic thinking will be completed in June 1998, and it will form the basis for a 2-year study of professional development that focuses on transforming elementary classrooms into environments that promote understanding of important and rich ideas based in algebraic reasoning. This integrated series of studies focuses on helping teachers develop deep understanding of students' mathematical thinking, and form in which teachers acquire this knowledge and the nature of knowledge of student thinking the teachers focus upon is systematically varied. Products have been prepared and will be presented at a national conference in spring 1998. Another article is in press. The papers are as follows:

Franke, M. L., Biagetti, S., Kazemi, E., & Shih, J. (1998). *Placing cases in the context of teacher change.* Unpublished paper.

Franke, M.L., Carpenter, T.C., Fenneman, E., Ansell, E., & Behrend, J. (in press). Understanding Teachers' Self-Sustaining, Generative Change in the Context of Professional Development. *International journal of teaching and teacher education.*

Franke, M.L. & Carpenter, T. *Teachers learning from their students: A model of self-sustaining, generative growth.* Unpublished paper.

Carpenter, T.P., Franke, M.L., & Levi, L.W. (1998). *Teachers' Epistemological Beliefs About Their Knowledge of Children's Mathematical Thinking*. Unpublished paper.

OERI Contacts: Wanda Chambers, 202–219–2035
Ram Singh, 202–219–2025

National Research Center on English Learning and Achievement (CELA)

Title of Project: National Research Center on English Learning and Achievement (CELA)—Center Overview

Principal Investigator(s): Judith A. Langer, Arthur N. Applebee, University at Albany-State University of New York, NY; and Martin Nystrand, University of Wisconsin at Madison, WI

Program: National Educational Research and Development Centers

Funding Level: $12,500,000. Year 1 $2,500,000; Year 2 $2,500,000; Year 3 $2,500,000; Year 4 $2,500,000; Year 5 $2,500,000

Project Period: 3/01/96–2/28/01

Center Mission and Focus: The mission of the National Research Center on English Learning and Achievement (CELA) is to improve the teaching and learning of English, including students' skills with oral and written language and literature. The Center's scope includes K–12 English instruction and also those academic subjects (e.g., social studies/history, mathematics, and science) where, increasingly, English skills are needed. The research projects are conducted in a variety of classroom settings with a diverse population of students in elementary and secondary schools in selected sites across the country.

CELA is conducting a set of methodologically diverse and scientifically rigorous studies aimed at improving student learning and achievement in English. The studies are organized in four strands focusing on understanding and improving: English language arts instruction in elementary schools; English and interdisciplinary instruction in middle and secondary schools; technology as it provides new contexts for literacy and as it offers tools for improving instruction; and professional development that is necessary for new understandings of teaching and learning to be incorporated into classroom practice. Within strands, studies share sites, measures, or both, allowing cross-site analyses of particular features of curriculum, instruction, and assessment. Individual projects, within each strand, offer an indepth view of the findings from a variety of disciplinary perspectives.

All of the studies and strands share an emphasis on the development of higher level literacy skills, on understanding exemplary instruction, and on curriculum, instruction, and assessment in the complexities of real schools and classrooms. Taken as a set, the studies seek to provide teachers, administrators, and policymakers with the research-based information necessary for informed decision making.

Educational Significance of Center Work: CELA's research will provide critical information in four central areas:

- knowledge of what students need to learn and to do in order to develop flexible strategies of language and thought they will need to deal with the sociocognitive demands they will encounter in school and in life;
- knowledge of the kinds of curriculum, instruction, and assessment most likely to produce these kinds of learning;

- knowledge of the kinds of information and experiences that help teachers reform their own practices; and
- knowledge of how English and the language arts operate in all of these contexts, providing educational decisionmakers with the knowledge to plan effective programs for all students.

There is a deliberate strategy designed to make the Center's research more responsive to the needs of practitioners and more accessible.

OERI Contact: Rita Foy, 202–219–2027

Title of Study: Improving Literacy in Middle and Secondary Schools (Grades 5–12): The Role of the Academic Disciplines

Principal Investigator(s): Cecilia Ford, Adam Gamoran, martin Nystrand, Lawrence Wu, Richard Young, and Jane Zeungler, University of Wisconsin-Madison, WI; Audrey Champagne, and Vicky Kouba, State University of New York at Albany, Albany, NY

Program: National Educational Research and Development Centers: National Research Center on English Learning and Achievement (CELA)

Funding Level: $2,578,345. Year 1 $459,884; Year 2 $476,377; Year 3 $647,442; Year 4 $545,546; Year 5 $447,096

Project Period: 3/1/96–2/28/01

Project Design: Each academic discipline has its own literacy requirements (e.g., language, organization, genre features) that are related to "knowing"—and demonstrating how much you know—about that discipline (cf. the national science and mathematics standards' call for students to be able to explain their reasoning). Middle and high school courses in the disciplines also can contribute to students' development of more general literacy skills. It is important to understand not only the literacy demands of the various disciplines but also the way that students learn how to perform in those disciplines and demonstrate their achievement within as well as across them. Research is needed to inform teachers, administrators, and policymakers from the local to national levels about: how writing, reading, and classroom discussion can work together to develop students' literacy skills; the relationship between the literacy demands of the new national standards in science and mathematics and the adequacy of current classroom practices and available materials related to preparing students to meet those standards; and how students—especially those with limited English proficiency attending high schools with very high drop-out rates (more than 50 percent)—learn how to productively participate in and learn from class discussions.

Three primary sets of studies address these questions. The first is a large scale quantitative study that examines ninth-grade English and social studies classrooms. The second is a close analysis of the literacy demands of the national science and mathematics standards and related curricula. And the third examines classroom interactions in several inner city classrooms to find the ways in which those students who stay in school learn how to take part in and learn from the subject matter discourse.

- What is the relationship between classroom discourse and student literacy achievement?

  This study seeks to understand how classroom discourse affects literacy development. In particular, it examines the ways English and social studies teachers connect (or do not connect) reading, writing, and classroom talk to foster student thinking, learning, and writing development. The study draws on data from 102 ninth-grade classes and uses large-scale quantitative analyses to examine the impact of classroom discourse on student achievement in writing and literacy.

- What are our national expectations for students' abilities to use and communicate scientific and mathematical knowledge, and are we preparing them to meet those expectations?

  Researchers are reflecting on the implications for instruction of a close analysis of the literacy demands made by the national science and mathematics standards as well as national and international tests (e.g., NAEP, TIMSS). Having found a high demand for literacy in the standards and tests, they are also conducting a document analysis of science and mathematics textbooks for examples of the kinds of reasoning and explanations the assessments call for, as well as teaching suggestions about what constitutes an appropriate task to demonstrate student knowledge and skills.

- How do diverse learners learn how to productively take part in the discourse in various subject matter classes?

  A longitudinal study of science, social studies, and mathematics classes in a multi-ethnic urban high school examines several areas related to and necessary for student classroom success. One of these areas is classroom talk—both productive talk, when maturing students learn to monitor their own talk and advance meaningful discussions and learning related to the subject matter, and unproductive talk that can disrupt learning and even lead to student suspension or expulsion. The study follows limited English proficient (LEP) students across time to learn how those students who succeed and stay in school learn these essential academic skills.

Educational Significance of the Study: Preliminary results show not only a low incidence of teachers who relate classroom reading, writing, and discourse (despite evidence that such connections better develop student literacy skills) but also a low incidence of models for students of well reasoned science and mathematics explanations of the type called for in the national standards and assessments. The findings of this set of studies have implications for teachers, administrators, and policymakers seeking to put in place curriculum and instructional practices that will enable diverse students to achieve the literacy levels they need for future success.

Status of Study and Products: At the conclusion of the second year of research, this set of studies had presented findings at several major national conferences, including the National Council of Teachers of English, Teachers of English to Speakers of Other Languages, and the National Science Teachers Association; and had published two technical reports, Towards an Ecology of Learning: A Case of Classroom Discourse and its Effects on Writing Development, and Literacy Components in National Science and Mathematics Standards Documents: Communication and Reasoning.

Annual conference presentations, additional technical reports, videos, and books will be completed in years 3–5, including:

- Additional quantitative and qualitative analyses and case studies of the interplay between discourse, reading, and writing in high school English and social studies classes, including the different opportunities offered to different students (e.g., in different tracks).
- Assessment designs that enable students to demonstrate their scientific and mathematical knowledge in accordance with the standards and released item of NAEP and TIMSS.

- A set of educational videos about language learning across the curriculum.
- A course (summer 1998) for science and mathematics teachers to develop scoring standards for extended response tasks that appear on the Science and Mathematics NAEP and TIMSS tests.

OERI Contact: Rita Foy, 202–219–2027

Title of Study: Improving Literacy in Middle and Secondary Schools (Grades 5–12): Understanding and Drawing on the Role of Home and Community

Principal Investigator(s): Deborah Brandt, John Duffy, and Karen Redfield, University of Wisconsin-Madison, WI

Program: National Educational Research and Development Centers: National Research Center on English Learning and Achievement (CELA)

Funding Level: $316,504. Year 1 $150,298; Year 2 $114,966; Year 3 $26,003; Year 4 $25,237

Project Period: 3/1/97–2/28/01

Project Design: Changes in English education—and the needs on which those changes are based—reflect changes in the larger society. Language and literacy are profoundly affected, for example, by economic and technological change, immigration, and ethnic minority groups' desires to retain some of their distinct characteristics within the American melting pot. Research is needed to look beyond the classroom walls to understand the role of home and community both in shaping literacy expectations and in supporting literacy development. English and language arts teachers can, in turn, use such knowledge to better understand their students, to draw on community literacy resources, and to shape their classroom practice to better help their students learn English and succeed and stay in school.

Three studies examine various aspects of literacy influences and acquisition within the community: the first examines how literacy demands have changed in the 20th century. The second examines the development of literacy by an immigrant community that was generally described as nonliterate upon its arrival in the United States. And the third seeks to understand and overcome one of the causes of Native American students' high postsecondary attrition rate.

- How have the conditions of literacy learning, particularly writing, changed over the 20th century?

  Researchers have conducted indepth interviews with 60 individuals born on family owned dairy farms to determine not only how literacy demands have escalated but also what individuals, institutions, or motivations helped the individuals learn to read and write across their lifetimes. Four cohorts of 15 individuals each born within 4 20-year intervals beginning in 1900 have provided the data for an analysis of the relationship between social change, reading, and writing in the twentieth century.

- How and why did a "nonliterate" immigrant group acquire the literacy necessary to pursue social, civic, and educational goals in U.S. society today?

  Oral interviews of 100 individuals from an American Hmong community are being used to explore and explain the connections between the literacies of home, school, and community as well as the social and historical forces that have acted on the community and its need for and acquisition of literacy skills.

- How can teachers help Native American students understand and capitalize on the difference between their communities' story-telling traditions and school's demands for formal essays?

  This study first investigates the differences between Native American students' traditional, narrative writing style, and the formal school or college essay. It then develops and introduces to both Native American students and their writing teachers various strategies for each group to understand the other's rhetoric in order to provide writing instruction that is more likely to lead to success for the students. A third phase will assess the effectiveness of these strategies in helping Native American students develop satisfactory writing skills.

Educational Significance of the Study: The findings from this set of studies contribute to teachers' understanding of their students' literacy needs, literacy traditions, and communities—all of which can be drawn on to help students acquire English skills necessary for the late twentieth century. This awareness is necessary for understanding the complexities of literacy growth and achievement.

Status of Study and Products: By the summer of 1998, this set of studies had presented findings at major national conferences including the National Council of Teachers of English and American Educational Research Association. Topics included, "From Literacy to Rhetoric: Sharpening the Sociocultural Focus of Reading and Writing" and "Literacy across a Lifetime: Widening the Lens on the Teaching of Writing." In addition, the essay The Sponsors of Literacy was published by the Center on English Learning & Achievement and in College Composition and Communication.

Annual conference presentations, additional technical reports, and books will be completed in years 3–5, including:

- A book by Deborah Brandt, *Pursuing literacy: Writing and learning to write in the twentieth century.*

- Teaching materials and workshops on strategies for helping Native American students understand and successfully use different rhetorics.

- A book on the history of literacy.

OERI Contact: Rita Foy, 202–219–2027

Title of Study: Improving Literacy in Middle and Secondary Schools (Grades 5–12): Features of Exemplary Instruction

Principal Investigator(s): Judith Langer, Arthur Applebee, Robert Bangert-Drowns, and Sandra Mathison, State University of New York at Albany, Albany, NY; Martin Nystrand, and Adam Gamoran, University of Wisconsin-Madison, WI

Program: National Educational Research and Development Centers: National Research Center on English Learning and Achievement (CELA)

Funding Level: $1,301,867. Year 1 $200,726; Year 2 $195,705; Year 3 $232,352; Year 4 $339,483; Year 5 $333,6013

Project Period: 3/1/96 – 2/28/01

Project Design: Different classrooms and schools produce very different results even when their student populations are similar. Why? What are the features of outstanding English teaching in middle and high schools? It is particularly important to understand these features in places where high risk students are successfully acquiring high level literacy skills. Research is needed to inform other teachers, administrators, and policymakers about: the kind of English instruction that helps students—especially poor, minority students—become good thinkers and users of language; how effective teachers strengthen and build their own classroom skills; what role, if any, interdisciplinary instruction plays in fostering literacy; and how innovations relate to one another and to student achievement.

Three primary sets of activities address these questions: the first is a set of onsite studies in four states: California, Florida, New York, and Texas. A second combines onsite research with national surveys. And a third is a cross-study analysis across all the sites in this study as well as others included in the work of the center as a whole.

- What are the essential features that lead to exemplary instruction in English?

  During the first 2 years, the research team is working in New York and Florida; the team will spend the following 2 years in California and Texas. Each site is being studied over a 2-year period in order to gain a full understanding of the school and professional contexts that enhance exemplary instruction. Project sites include two middle and two high schools in each state, two teachers (or teacher teams) at each school, and two full classes, including six representative students from each class. In total, the project will study 16 schools, 32 teachers, and some 900 students, of whom 192 are studied in depth.

- What role does interdisciplinary instruction play in students' acquisition of English skills?

  Through national surveys, interviews, and classroom observation, this study is designed to clarify how middle and high school students learn English within other disciplines when those disciplines are paired with English instruction. A national survey of the language arts coordinator in all 50 states and follow-up interviews with teachers involved in interdisciplinary or cross-disciplinary courses in each of the states provides baseline data about the nature of such instruction at the current time. Case studies of exemplary programs in California, Florida, New York, and Texas as well as extensive reviews of the related research and literature will provide detailed portraits of the features that distinguish interdisciplinary teaching and learning.

- How do various innovations relate to one another and to student achievement?

  This study serves to provide an overarching view across all other center studies. This analysis is to begin in 1999 and will offer a cross-cutting look at relationships among common features of curriculum, instruction, and learning.

Educational Significance of the Study: It is essential to know what the alternatives for reforming English instruction are as well as how effective innovations are in practice, and with what students. Only by knowing this can we understand what is gained and lost by adopting any innovation and thus inform the decisions that teachers, administrators, and policymakers make about curriculum and instruction.

Status of Study and Products: By the summer of 1998, this set of studies had presented findings at several major national conferences, including the National Council of Teachers of English, the National Reading Conference, and the American Educational Research Association. Primary topics included "Recent Research in Curriculum, Instruction, and Assessment" and "Defining the Domain of K–12 English Language Arts Curriculum: Issues and New Directions."

In addition, the following technical reports had been published: *The interdisciplinary continuum: reconciling theory, research, and practice;* and *The logic of interdisciplinary studies*.

Annual conference presentations, additional technical reports, and books will be completed in years 3–5, including:

- Technical reports, case studies, and a book describing exemplary English instruction in middle and high schools.
- Case studies that will provide models of interdisciplinary programs at middle and high schools, including analyses of the kinds of integration, the problems they found, and the solutions they devised.
- Analyses of the evolution of teachers' thinking over time as they teach interdisciplinary courses.
- Policy briefs regarding the tradeoffs between various innovations in English curriculum and instruction and student achievement.

OERI Contact: Rita Foy, 202–219–2027

Title of Study: Integrated Language Arts Instruction in the Elementary School (Grades 1–4)

Principal Investigator(s): Richard Allington, Virginia Goatley, Peter Johnston,
Anne McGill-Franzen, Sean Walmsley, and Rose-Marie Weber,
State University of New York at Albany, Albany, NY; and
Susan McMahon, University of Wisconsin-Madison, WI

Program: National Educational Research and Development Centers: Center on English Learning and Achievement (CELA)

Funding Level: $2,318,843. Year 1 $466,653; Year 2 $493,170; Year 3 $465,129; Year 4 $445,198; Year 5 $448,693

Project Period: 3/1/96–2/28/01

Project Design: Elementary school teachers frequently integrate or mix instruction across disciplinary boundaries with the belief that greater student learning grows from teaching a broader, more unified body of knowledge. This practice is especially prevalent in the humanities field so that social studies, history, language arts, reading, and literature are taught without regard to disciplinary or content boundaries. Critics charge that integrated instruction is in reality a watered-down curriculum, an instructional program lacking the basic facts that provide a firm foundation necessary for critical thinking. These opposing curricular approaches can be summarized as a debate between the traditionalists and the modernists with the latter group maintaining that an integrated approach is an effective, practical way to deal with curriculum overload while teaching challenging subject matter. Research is needed to determine whether integrated instructional approaches in elementary schools result in higher student achievement.

Research sites are located primarily in four states—California, New York, Texas, and Wisconsin—to provide geographic and demographic diversity and to enable researchers to make comparisons across studies. The total study sample includes more than 75 teachers and 2,000 students. Research questions include the following:

- What are the characteristics of effective reading and writing instruction?

  A set of contrasting case studies is examining 15 pairs of first-grade classrooms in 5 states to identify the characteristics of effective integrated elementary language arts instruction. Building principals selected pairs of classrooms, one representing a very good reading and writing teacher and the other representing an average reading and writing teacher. In addition to classroom observations of student engagement, student achievement is being assessed through reading and writing samples and standardized tests such as McGraw Hill's Terra Nova. The next step in the study is to examine an equal number of effective fourth-grade teachers and then to develop and test a professional development program based on the effective practices identified.

- What instructional activities support the development of literacy and the learning of literature and social studies?

A 5-year longitudinal study in 10 classrooms in grades 1–5 in 2 states involves collaborating with teachers to develop curriculum that integrates literature and social studies. All units are designed to meet school and district goals regarding student achievement in literacy skills and in understanding key social studies concepts and literacy genres-and then assessing changes in student achievement based on the curriculum changes. Data include intensive classroom observation, student case studies, standardized test scores, textbook exams, teacher-and research-developed performance measures; portfolios, and student and teacher self-assessments.

- How extensive are comprehensive or schoolwide integrated language arts programs?

  A national survey will first identify K–6 schools that employ a variety of curriculum integration models. A detailed questionnaire will then be sent to a representative sample of identified schools to determine the nature of the curricular integration, how it came about, how it progresses through the grades, how faculty were prepared and supported, and the effect on student achievement. These data will be further examined in site visits.

- How do state education agency policies affect elementary curriculum and instruction?

  An initial analysis of state curriculum frameworks, task force reports, and other policy documents related to state efforts to improve student achievement in language arts at the elementary level in four states is providing information about policy formulation. Interviews with state education agency personnel, school administrators, and teachers regarding implementation of new policy initiatives show how state mandated policies are enacted in the classroom.

Educational Significance of the Study: As a new educational practice, integrated curriculum is used by an increasing number of teachers and schools. It is essential to obtain data about its overall effectiveness as well as the particulars that can make it most effective in enhancing achievement among a diverse population of students.

Status of Study and Products: By the summer of 1997, the study had identified a preliminary set of nine characteristics exhibited by the most effective teachers. These characteristics are: high academic competence; excellent classroom management; a positive, reinforcing, cooperative environment; explicit teaching of skills; an emphasis on literature; reading and writing throughout the day; a match between accelerating demands and student competence; encouragement of self-regulation; and strong connections across the curriculum. Researchers also presented findings at several major national conferences, including the National Reading Conference, the American Educational Research Association, and an Education Writers Association regional workshop. Two technical reports were published: *Teachers' Use of New Standards, Frameworks, and Assessments for English Language Arts and Social Studies* and *Adequacy of a Program of Research and of a "Research Synthesis" in Shaping Educational Policy*. During the final years of the study, a book will be published describing outstanding elementary school integrated language arts instruction and its impact on student achievement.

OERI Contact: Rita Foy, 202–219–2027

Title of Study: The Role of Technology in the Development of Literacy

Principal Investigator(s): Robert Bangert-Downs, Joseph Bowman, Carla Meskill, and Karen Swan, State University of New York at Albany, Albany, NY;

Program: National Educational Research and Development Centers: National Research Center on English Learning and Achievement (CELA)

Funding Level: $908,383. Year 1 $190,196; Year 2 $174,227; Year 3 $176,279; Year 4 $179,397; Year 5 $188,292

Project Period: 3/1/96 – 2/28/01

Project Design: Despite the increasing investment in technology for schools, as a nation we do not yet fully understand what it means for students to be technologically literate or how technology can help students develop stronger literacy skills. Research is needed to develop fuller understanding about both of those aspects of technology—how it is changing our definitions of literacy and how it can foster literacy. In particular, we need to know how students learn from electronic texts; how teachers work with and use electronic media; and the characteristics and uses of available electronic media.

Several interrelated studies address these questions using a variety of research methods, from observation of students in classroom settings, to think aloud protocols in which individuals searching the World Wide Web verbalize their thought processes as they locate information, to critical reviews of existing literature and software. The major questions and the studies that address them include:

- How do students learn from electronic texts?

  Four projects are working simultaneously to answer this question from several perspectives—three classroom studies that each seek to understand a particular aspect of how students best learn from electronic media and one literature review. One classroom study is working to understand the particular features of software that most actively involve students in learning so that they can develop models for improving educational software. The research team has been observing 43 elementary students (pre-k through 6th grade) in an urban magnet school as they interact with 27 different software programs. From these observations, the researchers have developed a way to classify students' degree of engagement—from critically interacting with the software as they think and use language skills, to frustrated or disengaged. Another investigation has found that the use of video in hypermedia enhances student learning. A third study is seeking to identify the most helpful software programs for ESL populations. To date it has surveyed ESL teachers and found that those who use technology to foster English learning rely on regular, commercial software (e.g., science and geography programs) 95 percent of the time and on software specifically developed to teach English to non-English speakers only 5 percent of the time. The literature review will draw together the research teams' observations and leaning with those of others in the field, giving us an understanding of this new and complex learning environment.

- How do teachers work with electronic texts?

  Focus group research has found that teachers of English and language arts rarely mention electronic media when asked to define literacy skills—a finding at odds with the national English Language Arts Standards developed by the National Council of Teachers of English (NCTE) and the International Reading Association (IRA). These national standards call for students to acquire the ability to interpret information gained from nonprint or electronic media. Next steps are to find ways to bridge this apparent gap between classroom and everyday use of electronic media (most Americans use predominantly electronic media to acquire information on a day-to-day basis). Another study is using a think-aloud protocol to learn about the strategies that people use to get information from the Internet by videotaping them verbalizing their thoughts as they search for and read electronic texts. A third major activity is drawing on the results of the two studies just mentioned to develop exemplary curricula to demonstrate effective integrations of technology in education. One of these projects is incorporating mathematics, science, and English, with an eye to new standards in all three subject areas. A second has had good preliminary results in improving reading among low performing third-graders who took part in a program that relied on technology and tutors to develop reading skills. These three projects collectively inform us about the range of ways that effective teachers use electronic media to foster literacy learning.

- What are the characteristics and use of currently available electronic literature?

  A critical review of electronic media designed for or readily available to schools, including broadcast television, is evaluating the media against what we have learned about effective teaching of literacy (e.g., student ability to create text and to respond to and control the program). Included in this review is software designed to support cooperative learning in the classroom.

Educational Significance of the Study: Not only must schools prepare students for a world increasingly dominated by technology, they are also being asked to harness that technology to help students learn. To do either, schools need to know more about current technology and the ways it can be used most effectively to foster literacy learning. This knowledge can help both practitioners and policymakers make decisions about what technology to invest in and how best to use it to increase student achievement.

Status of the Study and Products: By the summer of 1998, this set of studies had been presented at several major national conferences (e.g., American Educational Research Association, National Council of Teachers of English, International Reading Association, National Educational Computing). Primary topics included "Teachers' Uses of Technology with ESL Students," "Hypermedia Support for Response-based Teaching and Learning," and "Literate Thinking, Language, and Electronic Literature." In addition, a technical report, *Technologies Use with ESL Learners in New York State*, has been published.

Annual conference presentations, additional technical reports, and principles of instructional design will be completed in years 3–5, including:

- Interim and final reports that integrate the findings across all the studies about technology and articulate characteristics of pedagogy, curriculum, and classroom cultures that best stimulate and support development of high level literacy skills among students.

- Principles of instructional design to guide the reconfiguring of commercial software or the design of prototypical software to foster literacy across the curriculum.

- Critical reviews of electronic media.

OERI Contact: Rita Foy, 202–219–2027

Title of Study: Teacher Education and Professional Development for English Language Arts Instruction

Principal Investigator(s): Jane Agee, State University of New York at Albany, Albany, NY; Ann Egan-Robertson, University of Wisconsin-Madison, WI; Pamela Grossman, and Sheila Valencia, University of Washington, Seattle, WA; Bonnie Konopak, University of Oklahoma, Norman, OK; and Peter Smagorinsky, University of Georgia, Athens, GA

Program: National Educational Research and Development Centers: National Research Center on English Learning and Achievement (CELA)

Funding Level: $924,789. Year 1 $237,916; Year 2 $232,494; Year 3 $150,428; Year 4 $151,447; Year 5 $152,504

Project Period: 3/1/96–2/28/01

Project Design: Today's students are expected to attain higher levels of literacy than ever before. To achieve this will in turn require a teaching force that is knowledgeable about the most effective approaches to teaching and learning. Yet the majority of today's teachers first learned to teach before 1970, and of these, 50 percent plan to retire over the next decade. To date little research has been done to understand how inservice and preservice teachers gain and apply new knowledge about learning and teaching. Such an examination will help schools of education, policymakers at all levels, and school administrators provide teacher preparation and professional development programs that effectively help teachers acquire and use knowledge and skills that will increase their students' achievement.

This research focuses on the impact of teacher education, both preservice and inservice, on how different teacher education program models and settings influence teachers' ideas about teaching, learning, and culture—as well as how they enact those ideas in the classroom. At research sites in California, Georgia, New York, Oklahoma, Washington, and Wisconsin two major studies address the following questions:

- What settings enable developing teachers to fully grasp and use new knowledge and approaches to teaching and learning?

  A diverse set of teacher preparation models are being studied in this project. Two interrelated studies address the question through classroom observation of student teachers, new teachers, and experienced and cooperating teachers, coupled with interviews of teachers and those who prepare them and support them once they enter the classroom. Eighteen experienced high school English teachers at 5 sites in New York and Georgia are being observed and interviewed about their perspectives on teaching literature, including their goals for different groups of students. These data are complemented by interviews with those who prepare secondary English teachers in two different university teacher preparation programs. In Oklahoma, and Washington, preservice teachers in 22 sites have been observed student teaching—and a subset are now being observed as they begin their careers—to determine how they acquire the necessary conceptual and pedagogical tools to foster literacy development in a diverse student population and what elements of their programs enable them to be able to incorporate and use these tools in their own professional practice. Preliminary results indicate that experiencing teacher preparation with a cohort of peers who take classes together and go through student teaching together has a very powerful and positive effect on new teachers being able to put their training into practice rather than simply adopt the practices of the schools they enter.

- How can teachers build on knowledge about community language and literacy practices in order to teach diverse students more effectively?

  This study seeks to understand how teachers and those preparing to become teachers make day-to-day choices about literacy instruction when their students differ significantly from them in terms of race, culture, and/or ethnicity. In addition to analyzing classroom discussions, researchers are sharing the results of their analyses with teachers and student teachers as they all examine their cultural beliefs and seek more effective ways to nurture their middle school students' literacy skills. This study is linked to and builds on other studies in the Center that focus on drawing on community and culture to bolster student achievement.

Educational Significance of the Study: Several national reports have called for improving teacher preparation programs as well as for helping the current teaching force acquire the new knowledge and skills to help their students meet a higher standard. If we do not understand how to ensure that program improvements are carried out by new graduates and practicing teachers, such improvements will have little effect. This body of research will identify the aspects of preservice and inservice programs that effectively promote practices that lead to teaching that improves student literacy achievement—and that help teachers sustain those practices out in the field.

Status of the Study and Products: By the summer of 1997, this set of studies had begun to identify key features of effective preservice programs (e.g., the formation of cohorts of preservice teachers). Researchers had presented findings at major national conferences, including the National Council of Teachers of English, the American Educational Research Association, and the International Reading Association. In addition, a theoretical essay, *Understanding Relationships of Personhood, Literacy Practices, and Intertextuality*, had been published by CELA and is slated for publication in the May 1998 issue of the Journal of Literacy Research.

Annual conference presentations and additional reports and journal articles will be completed in years 3–5, including:

- A comparative analysis of different preservice program models.

- A theoretical model to guide the development of both preservice and inservice programs for teachers.

- Case studies of teacher institutes and implementation of culturally sensitive literacy practices in classrooms with marginalized students.

OERI Contact: Rita Foy, 202–219–2027

Field-Initiated Studies (FIS)

Title of Study: Building Challenging Curriculum: Mathematics, Science, and Literature

Principal Investigato(s): John Bransford, Dan Schwartz, and Linda Zech, Learning Technology Center, Vanderbilt University, Nashville, TN

Program: Field-Initiated Studies (FIS)

Funding Level: $755,595. Year 1 $244,794; Year 2 $251,826; Year 3 $258,975

Project Period: 09/01/96–08/31/99

Project Design: Research studies demonstrate the need for more challenging approaches to teaching mathematics, science, and literature. Students often fail to learn with understanding because they assimilate new information to their existing concepts rather than change those concepts. Attempts to help students with conceptual change requires simultaneous attention to curriculum, instruction, and assessment. Teachers often have difficulty in dealing with this problem. Additional research is needed to develop design principles for a set of discipline-based curriculum units that can help teachers implement challenging curriculum in the areas of science, mathematics, and literature.

This project will create and study a set of discipline-based curriculum units that can help teachers implement challenging standards in the areas of mathematics, science, and literature. The project is based on the previous classroom-based research conducted by the principal investigator and his colleagues in which they collaborated with teachers to help students improve their achievement in the areas of mathematics, science and literacy. In these projects, they created new learning approaches which involved the use of video-based demonstrations or cases that presented information about important issues or problems; encouraged students to work collaboratively to reexplore the case to find relevant data and define important learning goals; engage in the planning and research necessary to meet their goals; and present their ideas to their classmates and discuss the pros and cons of different solutions. The findings from these studies documented gains in students' attitudes towards themselves as learners and problem solvers; abilities to solve complex problems and transfer their learning to new problems; and abilities to read with understanding and communicate their ideas both orally and in writing. The project will attempt to answer the following research questions:

1. How can teachers change the nature of teaching, learning, and assessment in their classrooms when they have access to well structured curriculum units that motivate students to seek complete understanding of relevant subject matters; organize their discussion, research strategies and presentations; and make their thinking visible so that they can receive feedback from teachers and peers and revise?

2. What are the effects of various beginning curriculum units on both students' and teachers' learning and achievement?

3. What are the design principles for creating beginning curriculum units that involve substantive content and are user friendly?

4. What kinds of ongoing support (i.e., ongoing electronic communication) do teachers need in order to feel comfortable in using curriculum units and learning from their attempts to do so?

The current project involves three different types of studies:

- classroom-based studies involving researchers and teachers observing change with various instructional materials (such as video-based Working Smart, one of the 12 adventures in Jasper Woodbury Problem Solving Series) on overall interaction and performance;
- controlled pullout studies—these studies involve the use of pullout groups where researchers can carefully monitor the conversations that take place among students and the research questions that students generate; and
- Internet studies—these studies are internet-based studies which require data gathering at a distance.

Educational Significance of the Study: This project is directly related to the nation's goal of ensuring high achievement for all students. The studies focus on the acquisition of basic knowledge and skills in core academic subjects and the development of effective instructional materials. In addition, this project will develop principles for creating beginning curriculum units for teachers to teach challenging content in science, mathematics, and literature.

Status of Study and Products: The researchers have so far worked with approximately 500 students in a number of different classroom and settings. Seven studies have been completed:

1. Comparison of learning over time;

2. Effects of sequencing text and contrasting cases on student discourse and question generation;

3. Effects of catalogues on intellectual energy and learning from a science text;

4. Using contrasting cases to assess student thinking;

5. The effects of contrasting cases on expert-novice communication;

6. Effects of contrasting cases on vocabulary learning and transfer; and

7. Effects of contrasting cases on supporting students' abilities to learn from texts and lectures.

Two of the studies from this grant have already been published. One research paper entitled "SMART Environments That Support Monitoring, Reflection, and Revision" from Study 1 will be published in Hacker, Dunlosky & Graesser (Eds), *Metacognition, in Educational Theory and Practice*, Mahwah, NJ:Erlbaum. A second paper, entitled "A Time for Telling", will be published in the *Journal of Cognition and Instruction*. In addition, this project has created three World Wide Web challenges that use contrasting cases: one for river ecosystems, one for a unit on creating habitats for Eagles, and a third on basic principles of geometry. Approximately 1,800 students and 90 teachers in 90 schools have responded to these internet challenges.

OERI Contact: Ram Singh, 202–219–2025

Title of Study: Block Scheduling: A Vehicle for Improving Achievement in High Schools

Principal Investigator(s): Geoffrey Maruyama, University of Minnesota, Minneapolis, MN

Program: Field-Initiated Studies (FIS)

Funding Level: $349,496. Year 1 $167,091; Year 2 $182,405

Project Period: 9/1/96–8/31/98

Project Design: Block scheduling is one of the changes in school organization many schools are considering as they implement school reform and restructuring. Block scheduling increases class length into fewer, larger blocks of time, most commonly into 4 blocks of 85–90 minutes rather than the 6 or 7 blocks of 45–55 minutes of traditional school schedules. However, there is little research on the impact of a change to a block schedule. Does a change to block scheduling lead to increased educational opportunities for students, reduced impersonal quality of large schools, or reshaped instruction in schools? This project includes measures of school environment, quality of teachers, teaching strategies, student learning during class time, and student attitudes toward school.

This project examines the effects of block scheduling in the Anoka-Hennepin school district in Minnesota. The schools participating in the project are changing their daily schedules into 4 blocks per day of 85–90 minutes. The impact of this change on the schools, students, and teachers is being examined through two components.

The first component of this project builds on prior research conducted in the 1994–95 school year in the same school district and tracks changes in students over 4 years. The specific research questions for this study are:

- What impact does a change to block scheduling have on student achievement and what factors are central to its success?
- Does block scheduling result in appreciable loss of curriculum or adversely affect sequential classes? How do the students do in cumulative classes?

The second component of the project examines the effects of block scheduling in 22 additional schools across urban, suburban, and rural school districts in Minnesota and Wisconsin. This component also measures the schools over time. This project uses a quasi-experimental approach that will survey teachers, student and parents; and include classroom observation, interviews, focus groups, and analysis of grades and standardized test performance. There is a special focus on sequential courses in the areas of math and foreign language. The specific research questions for this study are:

- What are the characteristics of schools that seem to show the greatest classroom changes and the most positive overall impacts on students of a shift to block scheduling?
- How do differences in staff development activities and staff attitudes toward change affect implementation of changes and their success?

Educational Significance of the Study: Restructuring schools is receiving major attention in high schools across the nation, yet it is an area that does not have a lot of research, especially about how teacher behavior needs to change for longer school periods. This study examines the impact of block scheduling on student achievement; issues related to school management; parental attitudes; what types of schools show the greatest classroom changes; and the effect of staff development activities on implementing block scheduling.

Status of Study and Products: Data have been collected on student performance; classrooms have been observed; focus groups of students, parents, and staff have been conducted; and parents, students, and teachers have been surveyed. Six schools have been added to bring the total to 22 in the multidistrict study. Staff have developed a home page on block scheduling *(http://carei.coled.umn.edu/BSMAIN.THM)* and a listserve through which educators interested in block scheduling can ask questions or provide advice, and through which participating schools can interact. The web page attracts about 40–100 hits per day, and the listserve draws 5–20 e-mails per day.

OERI Contact: Carol Cameron Lyons, 202–219–2158

Title of Study: The Effects of Class Size Reduction on Students' Opportunities to Learn

Principal Investigator(s): Brian Stecher, Social Scientist, and Cathleen Stasz, Senior Behavioral Scientists, The RAND Corporation, Santa Monica, CA

Program: Field-Initiated Studies (FIS)

Funding Level: $655,312. Year 1 $211,255; Year 2 $208,279; Year 3 $235,778

Project Period: 10/01/97–09/31/00

Project Design: A growing number of states are implementing programs to reduce class size as a key element of educational reform. Enthusiasm for class size reduction as a policy tool is based in part on empirical evidence about the effectiveness of this reform. The question of why these effects are realized, however, remains largely unanswered as initial studies of teaching practices in reduced-size classes reveal less change than one might expect. Additional research needs to address how curriculum and teaching practices differ in large and small classes and to identify the teacher and school factors that contribute to these differences. Such information would help policymakers develop supportive activities to enhance the benefits of this policy.

While research suggests that reducing class size improves student achievement, it does not clarify the importance of a number of factors that might mitigate the value of class size reduction, including teachers' knowledge and skills, professional development opportunities, the local school policy context, and the level of parent-teacher interaction. This 3-year study of California elementary schools will compare small and large classrooms to find out what happens to learning opportunities when class size is reduced and to examine which other variables might affect these changes. Six major research questions will be addressed:

1. Does curriculum content differ between reduced size and regular size classes, particularly in language arts and mathematics?

2. What range of teaching practices (including individualization of instruction and instructional planning) characterize reduced size versus regular classrooms, particularly in language arts and mathematics instruction? Do teachers in reduced size classes provide different kinds of learning experiences for students that aim toward developing higher order skills of deeper understanding?

3. Does the type and use of instructional resources differ between reduced size and regular size classes, particularly in language arts and mathematics?

4. Does reduced class size increase parental involvement?

5. What kinds of instructional supports do teachers in reduced size classes receive? Do these supports differ for regular class size teachers?

6. What policies, at the district or school level, directly or indirectly affect opportunity to learn in reduced size classes?

In selected California classrooms, the study will explore students' learning opportunities using case study and survey methods. From 1997–99, investigators will conduct indepth analysis of teaching behaviors through case studies of 16 3rd-grade classrooms. The goal of this phase of the study is to document how teachers' practices evolve over time and how they work with different groups of students in classrooms of less than 20 and more than 30 students. Data will be collected through interviews with teachers and administrators, classroom observations, reviews of classroom assignments, assessments and student work, and analysis of lesson interactions based on videotapes to identify significant variables.

The results of the first year's case studies will form the basis for a statewide sample survey of 200 schools to be administered in 1998 and 1999. The survey will examine the prevalence of these behaviors and behavior changes in 3rd-grade classes in California and will allow a comparison of classroom practices in classes reduced to 20 or fewer students with regular classrooms of 30 or more students. Since case studies and the survey will be repeated for 2 years, investigators can examine the evolution of teaching practice as growing numbers of California school districts implement class size reduction, teachers become familiar with the opportunities provided by smaller classes, and targeted staff development becomes more widely available.

Educational Significance of the Study: Spurred on by research which generally correlates small class size with student achievement, a growing number of states are implementing programs to reduce class size as a key element of educational reform. This study will clarify the importance of a number of "opportunity to learn" factors that might mitigate the value of class size reduction, including teachers' knowledge and skills, professional development opportunities, the local school context, and the level of parent-teacher interaction. The study will also measure the prevalence of particular teaching practices across the state and to monitor changes in these practices over time. This information will help educators make the best use of the opportunities class size reduction provides, and it will help policymakers develop supportive activities to enhance the benefits of this policy.

Status of Study and Products: Annual performance reports, beginning in 1998, will indicate progress made in the study. A definitive report will be issued at the end of the study. The results of the study will be presented to district and state policymakers on an annual basis to help them design support services to enhance the effects of class size reduction, and the final results will be disseminated nationally through journal articles and conference presentations.

OERI Contact: Marian Robinson, 202–219–2215

Title of Study: A National Survey of Technology's Impact on Instructional Practices

Principal Investigator(s): Henry J. Becker, University of California-Irvine, CA

Program: Field-Initiated Studies (FIS)

Funding Level: $470,700. Year 1 $104,600; Year 2 $261,500; Year 3 $104,600

This project is jointly funded with the National Science Foundation (NSF).

Project Period: 09/01/96–08/31/99

Project Design: Studies have demonstrated the theoretical rationale and empirical plausibility of using information and communications technologies to accomplish major instructional reform. What is unclear, however, is whether the constructivist learning approach, that emphasizes how every learner must form or construct his or her own meaning, can be made a more effective instructional approach when combined with extensive use of technology. How commonly does students' use of school computers involve creative and analytic work rather than skill practice? What are teacher beliefs about the utility of technology—is it enrichment or does it help build students' core content knowledge? Researchers have collected some data on the presence and utilization of technologies at the school level and anecdotal data on how and why some teachers incorporate technology in their teaching. However, there is still lack of data on how often teachers of specific subjects and at different school levels use technology and how dominant are various assumptions that guide their pedagogy.

This study is conducting a national survey of approximately 5,000 K–12 teachers to examine how their use of computer technology affects their instructional practices and beliefs. More specifically, the research questions include:

1. How often are different computer applications used by mathematics, science, social studies, and other teachers and their students?

2. How frequently does one find constructivist perspectives and compatible instructional practices among teachers?

3. What is the relationship between how teachers use computers and their instructional beliefs and practices?

4. How do technology-using teachers with a constructivist perspective differ from other teachers in terms of their school context and personal backgrounds?

5. Is the availability of technology changing teachers' basic pedagogies and beliefs, or does technology merely make accessible new learning activities to those teachers already pedagogically inclined towards constructivist teaching?

6. How valid are self-report survey instruments for investigating detailed issues about teacher beliefs and teacher practices?

This survey is comprehensive across levels of elementary and secondary schooling and teaching populations but targeted to provide the largest samples and most detail for teachers of science, mathematics, and social studies—three areas where constructivism has taken hold in the current reform movement.

The sample of teachers has drawn from up to 1,600 schools nationwide. Nine-hundred schools in the study will constitute a national probability sample of all U.S. elementary and secondary schools, public and private. A second sample is a targeted selection of 250 schools with particularly extensive amounts of instructional technology ("High-End Technology Schools"). A third sample consists of approximately 450 schools participating in 1 of 52 national or regional instructional reform programs ("Instructionally Reforming Schools"). The use of such targeted schools will help us to know how much more common constructivist use of technology is (and how different the teachers' backgrounds are) in restructuring schools or technology magnet schools than in schools in a national probability sample.

In addition to the survey, the research includes the validation of survey approaches to studying teacher beliefs and practices through parallel classroom observations and indepth interviews.

Educational Significance of the Study: This study will provide strong national baseline data for examining groups of innovating, technology using teachers. Using the results of this nationally representative sample as an early baseline, future studies could measure the growth of teachers' use of innovations in educational technology. In addition, this study will provide information on how computer-based technologies can facilitate constructivist-oriented classroom teaching in mathematics, science and social studies, and instructional reform.

Status of Study and Products: This study is planning to publish six major research papers under this grant:

1. The Validity of a Survey Approach to Measuring Constructivist Teaching Practices and Attitudes;

2. Teachers' Use of Computer Technologies;

3. Constructivist Teaching in American Schools;

4. Constructivist Teaching and Computer Technology;

5. School Context and Personal Determinants of Instructional Reform with Technology; and

6. The Professional Development of Constructivist Users of Technology.

Investigators have completed field work on "Validation Study" which had three goals. The first goal was to construct a wide range of survey questions of teacher belief and practice (including direct questions of general belief and practice, specific incidences of recent experience, and opinion questions asked through context-rich "vignettes"). The second goal was to do the validation by correlating teachers' responses to the survey questions with coded judgments of those same teachers' beliefs and practices made by observing their classroom practice and interviewing them in depth. The third goal was to collect validation information by group oral interviews and written questionnaires completed by students in the observed classes.

OERI Contact: Ram Singh, 202–219–2025

Title of Study: Decision Support System

Principal Investigator(s): Mark Moody and Lani Seikaly, Maryland State Department of Education, MD

Program: Field-Initiated Studies (FIS)

Funding Level: $779,636. Year 1 $281,320; Year 2 $266,576; Year 3 $231,740

Project Period: 10/01/96–09/30/99

Project Design: Improved decision-making at the school level is of increasing concern as site based management and local control issues become more institutionalized in the governance structure of schools. At the same time, state level policymakers, business groups, and citizens are calling for better accountability systems and increased student achievement. State Departments of Education have found themselves with high stakes tests and voluntary improvement processes. Research is needed to determine if improved access to student achievement data can assist educators in making better data-based decisions to improve teaching and learning.

This project is examining whether a decision support system designed to analyze Maryland School Performance Assessment (MSPAP) data will improve School Improvement Team decisionmaking at the school site level. The goal of the MSPAP system is to improve instruction, and thus the achievement of Maryland students by using an aligned performance based assessment system at grades three, five, and eight. MSPAP forms the core of the state accountability system, but was also designed to provide instructional models.

Annually, individual schools are provided with a mass of data that is to be used to evaluate how well the school is doing and how it can do better. However, the data are rarely used beyond comparisons across schools for accountability purposes. The instructional uses of the assessment system have yet to be fully realized.

In addition to providing the school performance data in easily understandable ways, project staff are developing support materials that will identify comparable sites with better achievement data and best practice links to support instructional change. The goal is to improve the school improvement team decisionmaking process and ultimately student performance. The study will address two core educational issues:

- How assessment data be analyzed and translated into a format which is useful to stakeholders in individual schools?
- What are methods of linking theory to practice in ways that allow for flexibility for local practitioners within a framework of state standards and assessments?

Following the design phase, three pilot and three control schools will be evaluated as to their school based decisionmaking process, classroom practice, and the student performance. Specific questions include:

- How have the planning and administrative activities of the School Improvement Teams changed as a result of using the MSPAP data?

- Have teacher instructional behaviors that support MSPAP increased as a result of the data analysis? For example, are teachers in the pilot schools using more performance tasks, asking more open-ended questions and making connections across the disciplines?

- What is the impact on MSPAP?

Educational Significance of the Study: Many believe that American students are being tested too much without any increase in student achievement as a result of all the testing. There is another school of thought that believes that the issue is not too much testing, but rather not enough use of the information generated by the current testing and assessment programs. This project is looking at the second proposition, for example, facilitating the use of the data currently being gathered to improve student achievement at the school site level.

The use of technology for both instructional and management purposes has grown. Using Internet based data analysis tools to compare and contrast results is both effective and efficient. It allows the user to customize their questions and answers ina ways that paper-bound data reports do not. The potential uses of a state specific Web site that includes the assessment data with an analytic model linked to instructional resources are limitless.

Status of Study and Products: Nineteen hundred and ninety-seven was the first year that the pilot system was available with the release of the assessment data in December. The participating schools are currently being trained in the system's use as the instructional links are built. The data are available at *www.mdk12.org*. The U. S. Department of Education's Planning and Evaluation Service is providing support for some of the development of the Web site.

OERI Contact: Margaret E. McNeely, 202–219–1568

Title of Study: The First Steps Program

Principal Investigator(s): Helen Freidus, Bank Street College, New York, NY

Program: Field-Initiated Studies (FIS)

Funding Level: $729,784. Year 1 $224,135; Year 2 $247,577; Year 3 $238,072

Project Period: 10/01/96–09/31/99

Project Design: With an increasing disparity between the high literacy demands of today's sophisticated jobs and the low skill levels of young people entering the workforce, there is genuine national concern about children's literacy. At the same time, the absence of a broad repertoire of effective instructional strategies prevents many teachers, new and experienced, from meeting the needs of the children they teach. First Steps, developed in Western Australia as a resource for teaching literacy, offers teachers a means of assessing student development in reading, writing, spelling, and oral language. Moreover, it helps them to link this assessment to practical classroom-based instructional strategies that ensure that children make and maintain steady progress in literacy acquisition. In so doing, First Steps appears to provide sorely needed skills and strategies for teachers and students alike. This study documents the effectiveness of this unique program, new to this country, within the context of one urban public school system and explores the implications of its outcomes for literacy education throughout the country.

In an attempt to move beyond the numbers and gain an understanding of what lasting outcomes are or are not being brought about through the implementation of First Steps, this study focuses not only on the outcomes of the implementation but also on the processes through which they emerge. With this in mind, the research questions that guide the study are:

- How does the implementation of First Steps impact upon student literacy achievement?
- How do the descriptors articulated in the First Steps assessment tool, the Developmental Continuum, relate to the children from diverse backgrounds in the United States?
- How do the professional development structures specifically designed to help teachers understand and implement literacy curriculum enable them to become more effective in their assessment of children?
- How does the emphasis First Steps places on parent-school collaboration affect children's literacy achievement?
- How does the political and social context of the school community impact upon teachers' practices and students outcomes?

Case study methodology has been chosen as the research tool most appropriate to these investigations. Indepth studies are being conducted in four schools (K–5) with distinct approaches to literacy now implementing First Steps on a school-wide basis. These schools serve a total population of 1,200 children primarily, but not exclusively, from minority families and families with low socioeconomic status. Using a method of constant comparison, data is coded and patterns within the implementation process at each site are identified and compared across sites.

In each case study, the implementation process is being documented across each academic year of the study through surveys, systematic classroom observations, audiotape analysis of focus groups and individual interviews, and videotape analysis of literacy lessons. Focus groups are comprised of distinct populations of teachers, professional development personnel, parents, and children. Individual interviews are conducted with teachers, professional development personnel, and administrators. In addition, report cards, student work samples, standardized test score (Iowa and MEAP), district directives, state mandates, and state curriculum frameworks are being reviewed on an ongoing basis.

Educational Significance of the Study: There is no question but that despite the best efforts of teachers and administrators current literacy practices are not meeting the needs of many of today's children. This study moves beyond the boundaries of most literacy research to consider the ways in which the complex world of the classroom and the community in which literacy instruction takes places impact on learning. By comparing the schools's common and unique experiences in implementing First Steps, the four case studies and cross case analysis will provide insight into what facilitates and what impedes the growth and development of skills in both teachers and students.

Status of Study and Products: The final report of this study will be completed in 1999. Principal investigators will present these findings at national meetings for teachers including AERA, NRC, and IRA. In addition, Heinemann has agreed to publish and disseminate a monograph sharing the findings. Finally, the First Steps study will serve as the focus of an urban literacy conference hosted by Bank Street College in 1999.

OERI Contact: Anne P. Sweet, 202–219–2043

Title of Study: Model Assisted Reasoning in Science (MARS)

Principal Investigator(s): Kalyani Raghavan, University of Pittsburgh, Pittsburgh, PA

Program: Field-Initiated Studies (FIS)

Funding Level: $644,511. Year 1 $222,241; Year 2 $207,780; Year 3 $214,490

Project Period: 1/1/98–12/31/00

Project Design: Understanding physical science concepts is a gateway to achieving advanced levels of science proficiency. Yet assessments indicate that change is needed to improve teaching and learning for middle school science students. Results from the Third International Mathematics and Science Study (TIMMS), released in 1996, have raised concerns about how to make mathematics and science instruction more challenging. Additional data from the National Assessment of Educational Progress (NAEP) 1996 Science Assessment of students at grade eight underscored the need to improve the science achievement of American students. The NAEP report specified test performance for eighth-graders at three achievement levels:

- three percent Advanced (signifying superior performance),
- 26 percent Proficient (grade-level performance demonstrating competency over challenging subject matter).
- 32 percent Basic (practical mastery of fundamental knowledge and skills).

The largest group of 8th-graders tested (39 percent) fell below the basic level.

Research is needed to show how middle-school science instruction can improve students' scientific knowledge and skills. Specifically, some researchers maintain that a model—such as an object, drawing, or diagram depicting an abstract scientific idea—can help students understand key concepts in middle-schools science education.

Research is focused on developing and testing instruction centered on models or diagrams of abstract ideas as a means to help sixth-, seventh-, and eighth-grade students understand key scientific concepts, structures, and processes. The instruction coordinates hands-on experiments with interactive computer programs that students in grades six, seven, and eight use to manipulate visible models of abstract concepts. In addition to computer simulations, students work with a variety of concept representations including three-dimensional replicas, drawings, and diagrams. By manipulating these visual representations, students depict and test their own ideas about scientific and related mathematical concepts. This project develops models of key concepts in science, such as those identified by the National Science Education Standards (developed by the National Research Council in 1996) to help improve student reasoning and student achievement in science. Research questions include:

- What is an appropriate sequence of model-centered instruction that can improve student achievement and student understanding of key science concepts ? What instructional strategies most effectively promote model-centered learning, and what tools enable teachers to acquire and use such an approach?

- How can instruction that centers on models and diagrams help students think and reason about key concepts and processes? How can this instruction enable students to transfer knowledge to new situations?

Multiple tests sites in the greater Pittsburgh area and three other regions in the United States are participating in this investigation. Sites are selected to insure diversity of school and geographic settings as well as racial/ethnic and socioeconomic backgrounds. The study is conducted in four phases: (1) developing and pilot testing computer tasks and hands-on activities with individual students of varying abilities; (2) refining the activities based on phase 1 testing and developing and field testing full instructional modules in selected classrooms; (3) further refining the modules for wide-scale classroom testing and summative review by external evaluators; and (4) making final revisions to the instructional modules based on phase 3 external evaluation and preparing appropriate professional development materials for teachers as well as materials for scholarly and professional audiences.

Data gathering components of this investigation entail comparisons of student achievement, descriptive studies and longitudinal assessments to measure changes that occur over years. Achievement data that will be collected each year include written and performance tests administered during and after implementation. Standardized tests of student achievement, attitudinal surveys, and content specific performance tests will be used to collect data within grades and across the three middle school grades. A random sample of students at each grade who receive the instruction will be compared with a random sample of students who do not receive the instruction.

Descriptive data collected include classroom observations and analysis of videotapes of classroom instruction. Field notes will be gathered and data will be analyzed for the following variables: time spent on process, content, and classroom management, and frequency of interactions (teacher-student and student-student). Student work will be analyzed and case studies will be developed documenting individual and group progress to identify effective teaching and learning strategies.

Educational Significance of the Study: This study will identify varieties of support needed by teachers to implement science instruction centered on models and diagrams of abstract concepts. To advance the utility of this research project, the study will develop and evaluate an extended sequence of instructional modules for sixth-, seventh-, and eighth-grade students. By the end of the 3-year grant period, the sixth-grade module will have been completed, and prototypes of the seventh- and eighth-grade modules will have been developed and pilot tested.

Status of Study and Products: The project began early in 1998. Instructional materials resulting from the MARS project will include student software and workbooks, hands-on and written instructional activities, assessments and scoring criteria, and software for teachers to tailor computer tasks to specific student needs.

OERI Contact: Wanda Chambers, 202–219–2035

Title of Study: Improving Student Achievement through Computer Networks that Support Student-Centered Instruction and Link Students' Classroom and Home Environment

Principal Investigator(s): Roger W. Ehrich, Virginia Tech University, Blacksburg, VA

Program: Field-Initiated Studies (FIS)

Funding Level: $559,254. Year 1 $213,100; Year 2 $165,648; Year 3 $180,504

Project Period: 09/01/96–08/31/99

Project Design: Although major national efforts are underway to utilize networking technologies, such as local area networks and internet access, to change the quality and breadth of K–12 education and to build stronger collaborative relationships among all parties in the educational process—schools, teachers, students, libraries, and parents—little is known about its measurable effects on student achievement. Deeper questions remain as to how networking technology can develop and sustain high quality standards-based, student centered instruction in disadvantaged rural areas of the country that appear chronically handicapped by disparity, scarce resources, and inadequate access to educational resources and economic development opportunities.

This 3-year project seeks to determine whether student centered classroom instruction which uses networking technologies to access Internet resources and link students with students and students with their families effects student achievement. The Computer Science Department at Virginia Tech has identified a 5th-grade classroom of 24 students at Riner Elementary School in rural Appalachian area of Montgomery County, Virginia to test their approach to integrating computer network technologies with student's classroom and home life. After randomly selecting students for participation, the fifth-grade classroom was restructured to hold a networked computer for every two students, allowing all students immediate access to computers as needed (see class photograph, *http://pixel.cs.vt.edu/edu/fis/room.gif*). In the projects first phase, computer specialists at Virginia Tech worked with the principal fifth-grade teacher to develop computer-based instructional units consistent with the state curriculum—the Virginia Standards of Learning—which focus on reading, writing, exploration, collaboration, and critical analysis (lessons available at *http://pixel.cs.vt.edu/edu/fis/lesson.html*). The entire curriculum can be presented using technology.

Students' home environment has been restructured as well, with each family house equipped with a networked computer so that students can work at home with their families in the same way they do at school. The school serves a diverse population ranging from professional families to those that are semiliterate and impoverished. In some cases this has required establishing phone lines in previously unconnected homes and in providing round the clock technical assistance, particularly to parents who have never touched a computer. All parents received intensive training along with their children and are provided opportunities to participate in school activities. The project's focus on parent involvement and home-school linkages leverages local resources from the Blacksburg Electronic Village (BEV), a National Science Foundation supported community networking model that extends Internet-based network services, training, user support, and resource integration throughout Montgomery County. BEV provides local residents government information, citizen access, social services, education, and business information to homes, schools, public libraries and places of work.

The project will be addressing the following questions:

Related to Parents:

- What network access strategies can be used to enhance parental involvement in education? How so these strategies impact the teaching/learning process?
- In what ways can the family learning/networking process be made easy enough so that families will not be discouraged from participating? How can cultural biases against participating be overcome?
- How readily do parents, students, and the teacher accept networking technology?
- How much is the computer used at home?
- Has this program resulted in better bonding between school and family? Has communication between the home and school changed? If so, how?

Related to Students:

- How do social relationships among students change as a result of using information technologies such as e-mail?
- Will students naturally collaborate as they investigate and use networking technology?
- Does the use of networking technology increase student interest in learning?
- Has network-based education succeeded in drawing students out of a provincial perspective of their world?
- Will the student gains be sustained after fifth grade in a conventional school environment?

Related to Teachers:

- What is the effect of these technologies on the teacher?
- How successful is an apprenticeship training model in which the teacher learns in a supportive environment without explicit technology instruction?

To address these questions and others, project investigators are gathering both qualitative and quantitative data. The 24 participating 5th-grade students at Riner Elementary School (RES) are paired with 2 types of control groups: (1) the 1996 and possibly the1995 graduates of RES, and (2) 5th-graders selected from the entire school system (excluding RES), 2 for each student in the study group as matched pairs. Student achievement will be measured using existing Montgomery County testing which includes the Cognitive Abilities Test in grades 1, 3, and 5, the Iowa Test of Basic Skills (ITBS) in grades 2, 3, 4, 5, 7, 9, and 11, and the Virginia Literacy Passport in grade 6. In addition, students will be given short tests for personality typing (Murphy-Meisgeier), for spatial reasoning ability (from Education Testing Service), and for learning styles so that correlations can be drawn between these indicators and students' technical performance and activities. Project staff plan to interview and survey parents and students about their computer abilities and family activities before, during, and after participation in the program. Student correspondence with the teachers and staff will be analyzed for changes in competency and literacy. A proxy server has been installed to record all World Wide Web usage at home and in the classroom so that usage patterns and content can be analyzed.

Educational Significance of the Study: Theoretically, the World Wide Web, collaborative technologies, and community networking have the greatest potential for educational reform in this century. Nationally much is being invested in networked technologies, however, the extent to which student achievement is affected in the long term—about 3 to 4 years later—is unknown. To the extent possible, the study addresses the capacity of technology supported student-centered instruction to improve student achievement.

Moreover, there have been no convincing programs that demonstrate how the potential of technology can be realized in varying educational contexts, including populations with high illiteracy and poverty rates. With the advent of educational, informational and economic resources available through Internet-based information and communication services, rural communities have an opportunity to close the gap in disparities and overcome some of the chronic handicaps as they attempt to prepare their citizens for an information-based economy, society, and workplace. As states rush to develop a new infrastructure to support the daily of use of technology in schools and expand all students' educational opportunities, the home-school connection, particularly in those homes that have limited capacity to reinforce school-based learning, must be examined.

Status of Study and Products: Annual performance reports to date indicate that good progress is being made in the study in light of a number of a challenges posed by changing school and county leadership and the construction of neighboring middle school. The project maintains an Internet Web site (*http://pixel.cs.vt.edu/edu/fis/*) which highlights classroom instructional units, student Web pages, guidance on computer purchases and installation and classroom reconfiguration, and descriptions of technical assistance required by both teachers and parents during the project. In the first year of the project, however, student achievement data revealed no measurable effect between participating and nonparticipating fifth-graders. On an occasional basis, the principal investigator makes project-related presentations to a variety of technology-based organizations, including the Virginia Society for Technology in Education, the American Educational Research Association, the American Association for the Advancement of Science, NECC, Virginia State Conference on the Power of Technology, and Teaching Inquiry with the Latest Technologies (TILT).

OERI Contact: Marian Robinson, 202–219–2215

Title of Study: Student Achievement and Classroom Case Studies of Phonics and Whole Language First Grades

Principal Investigator(s): Karin Dahl and Pat Scharer, Ohio State University, Columbus, OH

Program: Field-Initiated Studies (FIS)

Funding Level: $136,019. Year 1 $136,019

Project Period: 9/1/96–11/30/97

Project Design: There is an ongoing debate about phonics which charges whole language advocates with not teaching phonics skills. Whole language teachers claim that phonics concepts are embedded in classroom literacy lessons, but the research about whole language has not documented that claim. Moreover, the research has not indicated what phonics is learned by first-grade children in these programs. The debate centers on the ways skills instruction is addressed and whether whole language provides sufficient skill teaching for beginning readers. As the debate grows more heated, the need for comprehensive, credible research becomes more compelling. Research is needed to further investigate these claims and to document the process of phonics teaching and learning in whole language classrooms. Research must also address phonics achievement in these programs.

This 1-year study investigated phonics teaching and learning in whole language classrooms at the first-grade level. The study produced case studies of eight whole language classrooms situated in school systems representing urban and suburban districts with a range of socioeconomic, racial, and ethnic populations. In each case study, phonics instruction is documented through systematic observations, audiotape and videotape transcripts, and teacher interviews across the full academic year. Phonics learning is described for 200 first-grade children using prepost analyses of standardized measures assessing letter/sound knowledge in reading and writing; samples of students' reading and writing; and interviews with students and teachers. Tests included two assessments from Clay's Diagnostic Survey (1993). *Text Reading Level* measured phonics knowledge in the context of reading connected text, and *Dictation* assessed children's knowledge of 37 letter/sound relationships produced in writing dictated sentences. Two measures of phonics knowledge in isolation included the *Qualitative Reading Inventory—II Word List* (Leslie and Caldwell 1995) measuring decoding skill, and the *Developmental Spelling Analysis* (Ganske 1993) measuring encoding skills.

Research was guided by two questions:

1. How is phonics instruction implemented in whole language classrooms?
2. What do first-grade students learn about phonics in whole language classrooms?

In this study, whole language is defined as a perspective in which oral and written language are learned primarily in meaning-centered and functional ways: the cuing systems of language (phonology in oral, orthography in written language, morphology, syntax, semantics, and pragmatics) are present and interacting in any instance of language use; language itself occurs and has meaning in context; and reading and writing are learned from whole to small parts through the activities of reading and writing.

To develop each case study, field-note data reporting phonics instruction for a particular site was coded for context, phonics concept, teaching procedure (for example, demonstration or small lesson), and evidence of learning. Using the constant comparative method, researchers determined patterns in phonics instruction over the school year for each separate site and matched those descriptions with periodic teacher interviews.

Educational Significance of the Study: This study provides documentation of the nature of phonics instruction in whole language first-grade classrooms, the range of phonics approaches across eight case study classrooms, and the extent of children's phonics learning in these programs. The research findings will make a valuable contribution to the current debate about beginning reading and writing instruction and will provide essential information for literacy instruction for children in primary grade classrooms.

Status of Study and Products: The final report on this research study will be completed in 1998. The principal researchers will present these findings at national meetings for teachers including the International Reading Association, the National Council of Teachers of English, the American Educational Research Association, and the National Reading Association.

OERI Contact: Rita Foy, 202–219–2027

Title of Study: The Impact of Kentucky's Ungraded Primary Program

Principal Investigator(s): Roger Pankratz, Kentucky Institute for Education Research, Frankfurt, KY

Program: Field-Initiated Studies (FIS)

Funding Level: $657,543. Year 1 $219,223; Year 2 $219,160; Year 3 $219,160

Project Period: 10/01/96–09/30/99

Project Design: As the need for improving achievement focuses more closely on the importance of the early elementary grades—the foundation grades—different approaches are being examined. One approach that might hold promise is the ungraded primary which focuses on the developmental patterns of young children and matches school structure more closely to what is known about how students learn and develop.

The purpose of this research project is to determine the impact of Kentucky's Ungraded Primary Program (K–3) on student achievement in reading/language arts, mathematics, social studies, and science. The study will compare the achievement of students in eight Kentucky elementary schools with the achievement of students in four matched elementary schools in other states (Indiana and Missouri) over a 3-year period. The study will also look at a subsample of high achieving students (top 20 percent) to assess the impact of the ungraded primary program on this special population.

All students will be tested beginning in grades 2–4 in the spring using Terra Nova (CTBS 5) Survey Plus and followed for 3 years. Kentucky schools are currently administering Terra Nova in addition to their state developed assessments. The subsample of students will be tested in the fall on the Woodcock-Johnson Test of Achievement in reading and mathematics. Teacher profiles will be developed based on the their implementation of the ungraded primary model.

Educational Significance of the Study: The ungraded primary program is a key component of the Kentucky Education Reform Act (KERA). The program was designed to fundamentally change K–3 classrooms by focusing on continuous improvement and developmentally appropriate instruction. It is based on the most current research and best practices in early childhood education which have not been looked at from the classroom level.

The program has both supporters and opponents in Kentucky. Supporters cite improving achievement in the early grades while opponents are skeptical of the degree of implementation and the long term effects. This study will be a rigorous evaluation of the program with both experimental and control populations. It will also look at the degree of implementation which is a major concern among educators and policymakers in the state. There is a strongly held belief that schools that have implemented the program consistently are experiencing achievement gains. The lack of achievement is based on "poor implementation" rather than the program itself.

Status of Study and Products: The first year of testing was completed last spring and this fall with base year results currently being analyzed. After visiting classrooms, the principal investigators have decided to spend more time and effort analyzing the degree of implementation as well as achievement results. Products to date include: first year data on grades two, three, and four based on the Terra Nova (CTBS5) survey form and profiles of classroom learning environments.

OERI Contact: Margaret McNeely, 202–219–1568

Title of Study: The Redesign of Classroom Instruction

Principal Investigator(s): Judith March, Kent State University, Kent, OH

Program: Field-Initiated Studies (FIS)

Funding Level: $577,347. Year 1 $184,321; Year 2 $196,598; Year 3 $196,428

Project Period: 10/01/97–09/30/00

Project Design: Current reform efforts place emphasis on comprehensive, coherent changes in classroom instructional practices and teacher professional development, curriculum, and corresponding assessments. The assumption is that these holistic changes will result in improved student achievement. In many school communities, comprehensive school reform has focused on the teaching and learning process. Districts select from a smorgasbord of curriculum frameworks and instructional practices to develop a highly individualistic approach that best suits their local needs. What educators need to know is how effective this approach will be in improving student achievement. Research is needed to determine whether the principles of systemic reform are advanced and "fool-proof" enough to permit this approach—as opposed the taking an "off-the-shelf" reform package such as *Success for All*.

The key research question to be addressed is "can grassroots efforts to redesign classroom instruction result in measurable increases in student achievement in a range of core content areas in demographically different school districts within one state?"

The study includes 6 northern Ohio school districts (2 urban, 2 suburban, and 2 rural, with a total of 42 school buildings). Each school district is devising a 3-year plan to involve teachers in the curriculum redesign projects. The plan involves teachers at each school redesigning classroom instruction in one or more core curriculum areas to be determined at the project's outset through district needs assessments. Teachers and Kent State University staff will develop materials and procedures that will be piloted in their classrooms. The impact on student achievement will be assessed; in addition, changes in teacher behavior and attitudes are being observed and documented over the 3-year duration of the project.

Data used to measure change in student achievement include the Ohio Proficiency Tests (4th, 6th, 9th, and 12th grades) and norm-referenced tests (for example, the Iowa Test of Basic Skills, California Achievement Test, and Educational Records Bureau test) at the outset and close of the 3-year project period. Project staff have constructed a needs assessment protocol to assist district teachers in selecting which content area will be redesigned. As this exercise proceeds, the research staff from Kent State are working with district teachers to help them learn more about exemplary state curriculum frameworks and standards nationwide. Resources for this project include the 1997 publication from the Council of Chief State School Officers, *Mathematic and Science Content Standards and Curriculum Frameworks: State Progress on Development and Implementation*, and a range of standards materials from professional associations such as NCTM.

Educational Significance of the Study: Across the country, local school communities are working to re-design their educational systems. In most cases, they do not select "packaged" reform programs. Instead, they pick and choose: selecting from among many curricular, professional development, and assessment strategies. Learning how well this approach can work in improving student achievement is the ultimate test of this grass-roots systemic reform strategy.

The Kent State University FIS study adds testimony to this small body of research analyzing the relationship between student achievement and comprehensive school reform. Thus far, case studies of individual schools have provided evidence about systemic efforts (*Studies of Education Reform: Study of Curriculum Reform*, 1996). More student achievement data will be added in 1998 from the Department's Longitudinal Study of School Change in 71 schools.

Status of Study and Products: This grant began on October 1, 1997. During the first 2 months, the staff developed a needs assessment protocol that was implemented in six Ohio school districts. Analysis of that assessment was to be completed by March 1998. By the end of the first year, baseline achievement data, which include achievement benchmarks developed for each subject and grade level (K–12), will be collected and summarized. Other year end products include teacher-developed indicators for the instructional program and curriculum maps for each subject and grade level specifying the order of content to be presented and the approximate time allocated to each topic. As a next step, teachers will develop unit plans to guide the delivery of instruction. The final product for year one will be the initiation of the curriculum design process in all participating schools.

OERI Contact: Luna Levinson, 202–208–3716

Title of Study: The Role of Teacher-Leaders in Reforming Urban Schools

Principal Investigator(s): Judy Swanson, Education Matters, Inc., Cambridge, MA

Program: Field-Initiated Studies (FIS)

Funding Level: $283,734. Year 1 $123,711; Year 2 $141,299; Year 3 $18,724

Project Period: 10/01/97–09/30/00

Project Design: In 1996, the National Commission on Teaching and America's Future released an agenda for meeting America's educational challenges that connected the nation's need for improving student achievement with more skillful and competent teachers. In short, the report stated that what matters most in improving America's schools is the improvement of teaching. This simple directive raises the larger question of how exceptional teachers learn their craft. Research is needed to identify the essential qualities of teacher preparation and career experiences that combine to make master teachers.

This project involves a team of 3 senior researchers and 8–10 teacher leaders who work together to address the following four research questions:

- What essential knowledge, skills, and orientations do teachers need to implement curricular and instructional practices that are believed to promote high levels of student learning?

- What are the significant experiences or events in each teacher-leaders' professional journeys that have shaped their careers and their philosophy of teaching?

- What essential knowledge and skills do teachers need to effectively share their knowledge with peers to help others improve their classroom practice?

- What organizational policies and conditions either support or inhibit teacher development? The research team is conducting targeted observations and interviews with teacher-leaders across a 2-year period. Teacher-leaders are constructing portfolios with reflections on their own practice with students and colleagues. A Summer Conference will be held each year to engage the teacher-leaders in discussions to synthesize and analyze their portfolios and shared professional learning experiences.

Educational Significance of the Study: This project will take an indepth look at middle school teachers who have learned to teach in new ways and how they developed those capacities. It is also an attempt to demystify what is often considered to be the "extraordinary talents" of a few exemplary teachers, by looking systematically at how they learned to do what they do. The project will address what it takes for teachers to learn and implement new ideas in their own classrooms, as well as the skills needed to help other teachers learn to translate standards into effective classroom practices. The project will also examine school and district practices that affect both individual and organizational capacity building, identify district-wide standards-based curriculum reform process, and the policies and conditions that either support or inhibit teacher development within such a process.

Status of Study and Products: The project was initiated in October 1997. Project staff have conducted initial site visits to the schools/teachers who will be participating in the study. Teacher-leaders have been selected who will participate in the study and classroom observations will begin in February 1998. The project will produce three major products: (1) a document for school districts recommending strategies for providing teachers the learning opportunities and support needed to implement rigorous standards; (2) case studies of the teacher-leaders; and, (3) a cross-case analysis drawing lessons learned from the teacher leaders' professional careers.

OERI Contact : Jackie Jenkins, 202–219–2232

Title of Study: Safe Schools for the 21st Century

Principal Investigator(s): LaMar P. Miller, New York University, NY

Program: Field-Initiated Studies (FIS)

Funding Level: $797,869. Year 1 $258,135; Year 2 $291,393; $248,339

Project Period: 9/1/96–8/31/99

Project Design: Violence in schools has been described as a crisis of the 1990s not just for urban schools, but rural and suburban schools as well. A 1994 National School Boards Association survey found that 82 percent of the responding school districts said violence had increased at their schools over the past 5 years. According to the 1997 National Education Goals Report, 1 out of every 10 public school teachers reported that they had been threatened or physically attacked by a student in their school during the previous year. By 1994, the number of incidences of violence had increased to about one out of every seven. Given the level of violence in our schools, research is needed to develop effective methods and activities which reduce and prevent violence.

This project is designed to examine the existing knowledge concerning the causes and conditions of school violence; apply this knowledge to methods and activities which reduce and prevent violence in New York City's inner-city public high schools; disseminate this information more broadly in ways that will impact on public policy in secondary educational settings throughout the country; and organize a conference to highlight exemplary strategies and available resources to assist school districts in creating safe school environments.

The project will address several research subquestions such as:

- Why have the strategies of the current school reform movement been ineffective in reducing school violence?
- Has an over-reliance on metal detectors and security guards been a major factor in our reconceptualization of safer schools?
- Are the approaches outlined in current school-management and classroom-management textbooks enough?
- Do we have sufficient pedagogical and theoretical grounding to make informed judgments concerning the elimination of violence from schools?
- What are the societal influences that cause school violence?
- What are the pragmatic approaches which schools (whether public or private), states and localities have already adopted to help in reducing violence in schools?

The project is operating on-site at 10 inner-city New York public schools. At each of the 10 schools a small carefully chosen team of graduate students works on site. The graduate students are intending to become classroom teachers upon graduation. Each individual graduate student acts as a tutor/

mentor for the students who are referred to the program by teachers, counselors, and other school staff. Assistance takes many forms: individual instruction, help with homework or classroom work, test preparation, imparting of study skills, literacy and numeracy acquisition, personal counseling, field trips and a variety of other interventions. The tutors work closely with the parents and teachers in the program. The goal is to attempt to motivate high school students and to challenge them to succeed both academically and behaviorally.

This research study takes the position that tutors/mentors can be effective in reducing violence in large, overcrowded schools, when used in combination with other interventions: physical redesigning of the school plant; a more relevant curriculum; the introduction of conflict resolution and peer mediation; human rights courses and peace studies; community-based partnerships with social and health agencies. (For a fuller explanation of this position see *http://www.nyu.edu/education/metrocenter/violence/Frdefl.htm*)

The research focus arises from a basic educational setting. The tutors/mentors reflect weekly on their experiences in the schools; they become ethnographers who record the happenings as they interpret them. This first-hand, fresh perspective on day-to-day schooling provides insights into the contemporary causes and conditions of violence which are otherwise not obtainable through standard methodologies, surveys, and tabulations of the quantity of violent incidents in a school or neighborhood. The basic premise of the research grant is that the current strategies being used to prevent and contain school violence throughout the country may be flawed because there is insufficient foundational knowledge about the culture or ethos of violence from which these incidents emerge.

Educational Significance of the Study: This project addresses a problem of national scope—school violence. While there is near agreement in identifying school violence as a critical problem in urgent need of confrontation, there is a wide diversity of opinion about its causes and conditions, and an almost complete dissatisfaction with the methods and techniques that have been used to date to reduce, control, or eradicate school violence. This project initiates an additional conversation and dialogue on school violence with the purpose of framing a strategy that would make available to every school district in the country the concepts, mechanisms, and tools needed to create safe and secure learning environment for all children. In addition, the project will increase our understanding of the nature of school violence, its impact on the education of children and adolescents and, most importantly, to realize effective strategies for dealing with this nation-wide problem.

Status of Study and Products: This project is in the early stage of its 2nd year. The project has accomplished the following: development of a comprehensive annotated bibliography encompassing subfields related to the topic of school violence such as the ethnography of youth/school violence; dissemination of ethnographic work based on the fieldwork of the graduate students at a series of brown bag luncheons held at New York University; categorization of exemplary projects, techniques, training programs, and approaches; and in the preliminary stages of preparation for the national conference on school violence.

OERI Contact: Jackie Jenkins, 202–219–2232

Title of Study: Middle School Mathematics and Science

Principal Investigator(s): David Bloome, Susan Goldman, Ted Hasselbring, and John Bransford, Learning Technology Center,Vanderbilt University, Nashville, TN

Program: Field-Initiated Studies (FIS)

Funding Level: $763,637. Year 1 $255,911; Year 2 $251,625; Year 3 $256,101

Project Period: 09/01/96–08/31/99

Project Design: The Third Mathematics and Science Study (TIMSS), released in 1966, showed that math and science curriculum in the United States was a "mile wide and an inch deep." The results of TIMSS demonstrated the need for curriculum and instruction to focus on the major ideas in mathematics and science. TIMSS showed that in other countries curriculum is much more focused and structured. This research project tries to show how curriculum can be structured through day-to-day activities within the four main academic areas (Language Arts, Social Studies, Science, and Mathematics) to teach core concepts, basic and problem-solving skills, and a positive attitude toward academic learning.

The main purpose of this project is to study and develop ways to significantly enhance student achievement for middle school students across the academic year. Researchers are focusing on student learning and achievement across subject-matter domains and over time. "High achievement" is defined in this project as the acquisition of basic knowledge and skills in traditional academic subjects (e.g., reading, writing, mathematics, science, history, geography, literature) as well as the development of effective, reflective strategies for inquiry, reasoning, and explanation, along with an understanding of organizing concepts and principles both within subject areas and across the academic curriculum.

How can day-to-day activities be structured to reach high standards by the end of the school year? The researchers are trying to structure curriculum and instructional strategies so that both short and long-term goals are achieved. The research approach is to intensively study what happens in each subject area—specifically, how it is taught and how students actually go about completing their assignments and learning—and then identifying ways to boost achievement. Children are given curriculum which is related in clear and precise ways from day-to-day while simultaneously reaching long-term goals. Researchers are attempting to do this in such a way that on a day-to-day basis what is taught in mathematics reinforces what is taught in science and English and vice versa. The specific research questions are:

- What are the potential leverage points in curriculum and instruction for increasing student learning and achievement in middle schools across subject-matter domains and over time?
- How can technology-based tools help in exploiting the potential leverage points to enhance learning and achievement? How are the technology tools adopted and adapted by the teachers and students and how do they impact on achievement?
- What are the theoretically and empirically-grounded design principles that can guide the design of additional tools for enhancing student achievement?

The research is based on the previous experience of principal investigators with Schools for Thought (SFT) project. In SFT classrooms, the students are provided with opportunities to plan and organize their own research and problem-solving, plus opportunities to work collaboratively to achieve important goals. The overall goal is to help students learn to explore ideas, evaluate data, and consider opinions in a reciprocal interchange with peers, teachers, and experts.

The research project is located in the Metropolitan-Nashville School District which is the 25th largest school district in the country. Data collection in years 1 and 2 was in 3 schools; research staff worked with 14 teachers and 300 students across 4 academic subject areas. Year 3 of the project will focus on testing the project-developed academic tools with a group of 20–30 teachers and 400 to 600 students. (An example of an academic tool developed by the project is as a tool for organizing math and science knowledge to display similarities and differences in two subject areas.) Across the 3 years the number of classrooms involved with the study will be between 36 and 48 middle school classrooms, including both inner city and suburban schools. Data for this project will be collected by observations in the classrooms and by the use of frequent focus groups of teachers and students. The research plan includes two research teams: Classroom Team will focus on classroom observations and focus groups and seminars with teachers in order to identify relevant leverage points for enhancing achievement; and Technology Development and Evaluation Team will design tools for enhancing cross disciplinary learning and test their effects.

Educational Significance of the Study: One of the keys to improved student achievement is the development of curriculum materials and instructional strategies which provide students with both the basics and challenging standards. This project should provide teachers with techniques to teach challenging content in ways that improve student achievement in the middle school grades across the four major academic areas: the English Language Arts, Science, Mathematics, and Social Studies.

Status of Study and Products: During 1997 American Educational Research Association (AERA) meetings, the researchers presented three papers from this project:

- Taking hold of time, academic learning, and teaching across whole day whole year innovation;
- Initial observations on synergies and dilemmas for whole day whole year innovation; and
- Tools for enhancing learning across disciplines.

During the 1998 AERA meetings, the researchers will present two symposia (six research papers) and two roundtable discussion sessions from this research project that focus on ways to enhance student achievement across the curriculum.

In addition, the researchers have developed prototypes for technology tools in the areas of reinforcing core concepts in science; reinforcing core concepts in mathematics; helping students seek, organize and present academic knowledge; and helping students assess and get feedback on the level of knowledge acquisition achieved in social studies. Other learning tools are in the development stage.

OERI Contact: Ram Singh, 202–219–2025

Title of Study: Improving Substitute Teacher Effectiveness

Principal Investigator(s): Geoffrey G. Smith, Utah State University, Logan, UT

Program: Field-Initiated Studies (FIS)

Funding Level: $626,619. Year 1 $240,437; Year 2 $194,820; Year 3 $191,362

Project Period: 11/1/97–10/31/00

Project Design: Substitute teachers are a recognized sector of the teacher workforce, yet their presence in the classroom instantly signals a day of no learning, and oftentimes, a day of classroom disruptions and student disorder. The Schools and Staffing Survey (SASS) data report that the public school teacher workforce in school year 1993–94 was comprised of 95.8 percent regular, full- or part-time teachers, 3.8 percent itinerant teachers (such as art teachers who move from school or school), and 0.5 percent long-term substitutes. Given the growing emphasis on school accountability for student success, teachers and principals need to know how to improve substitute teacher effectiveness.

Research questions center on effective teacher training:

- What are the key elements of successful substitute teacher training?
- Is there a measurable improvement in student behavior and effective use of classroom time which influences student learning, when substitute teachers receive training?

The research will be testing the assumption that substitute teachers trained in classroom management skills, knowledge of teacher and district expectations, and specific instructional materials will provide an enhanced learning experience for students compared to nontrained substitute teachers. In August-October of each project year, surveys will be distributed to the 100 school districts nationwide participating in this study. The survey contains eight open-ended questions about the profiles, selection, and quality of exemplary substitute teachers. Each year of the 3-year project, staff will train 2,000 elementary substitute teachers in district and permanent teacher expectations, classroom management strategies, and instructional techniques. Resources for substitute teacher training are the Elementary K–8 and Secondary 9–12 Substitute Teacher Handbook, published by the Substitute Teacher Training Institute (STTI), Utah State University. At the end of the project, 6,000 teachers in 300 school districts will have been trained. The effects of this training will be evaluated through surveys and case studies of the training workshops.

Educational Significance of the Study: The study will design criteria enabling school districts to determine if a formal substitute training program is needed. Through this process, teachers and principals can reach agreement on substitute teacher expectations, classroom management strategies, and instructional techniques. Having a common set of procedures and expectations for substitute teacher will contribute to the day-to-day effectiveness of classroom operations.

Status of Study and Products: Periodic progress from the study and final study results will be presented in the *SubExchange*, a quarterly newsletter published by STTI. Research papers will be submitted for publication to the National Association of Elementary School Principals and the National Association of Secondary School Principals.

OERI Contact: Cora Corry, 202–219–1567

Title of Study: Examining Student Achievement Trends

Principal Investigator(s): Mark Berends, The Rand Corporation and Samuel R. Lucas, University California at Berkeley, Berkley, CA

Program: Field-Initiated Studies (FIS)

Funding Level: $436,918. Year 1 $122,455; Year 2 $143,130; Year 3 $171,333

Project Period: 10/01/96–09/30/99

Project Design: There is continuing national debate about the quality of children's family environments, the quality of their schools, and how changes in families and schools may be affecting student achievement. Within this debate, questions remain regarding the effectiveness of public policies and increased investments in education and social program in improving student achievement. Of particular importance are questions related to what accounts for student achievement trends over the past 20 years, particularly the significant gains for specific minority groups.

One area of investigation will be tracking, a topic of continued interest and debate nationwide, and one of the primary within-school experiences of students related to achievement differences. Proponents claim tracking is an effective response to students' diverse academic abilities. Critics, however, argue that tracking separates students according to social and economic characteristics, contradicting many important social goals of schools and leading to students in nonacademic tracks receiving low-quality instruction. These criticisms have led to calls for the elimination of tracking. However, before educational policymakers make such decisions, it is critical to understand the structure and effects of tracking, and how these have changed over time, particularly for minority students.

The project is examining several school-based explanations for minority and nonminority test score gains over the past 25 years, including the structure of secondary school tracking and the relationship among family background, track location, student attitudes, and achievement. Past research has shown that variation in the structure of tracking across schools has an impact on students' success. Yet, no research has investigated whether and how that structure has changed over time. This study will examine both the scope of tracking (the extent to which students within schools are located in the same track-level across subject areas) and track mobility (the degree to which students within schools move across levels in the same subject).

The main family background variables will include mother's and father's educational attainment, family income, Duncan's socioeconomic index, family composition (i.e, whether a two-parent household), mother's labor force participation, and whether English is the primary language spoken in the home. Student achievement measures will be the reading and mathematics test scores included in the NLS, HSB, and NELS data sets.

Research questions include:

- What changes across schools have had an impact on the test score differences between minority and nonminority students over the past 20 years?

- Are minority student gains related to increased access to higher quality schools due to desegregation or some other school changes?

- Have changes within schools (i.e., tracking) contributed to the minority test score gains?

- Have curricular tracking practices become more flexible over time so that minority students (who are disproportionately placed in low tracks) have greater opportunities to move into higher tracks?

- Have the criteria for track placement changed over time?

- Have the effects of tracking on student achievement changed over time?

The study will use data from three nationally representative data sets that cover the experiences of secondary school students in the United States between 1972 and 1992: (1) the National Longitudinal Study of the High School Class of 1972 (NLS–72); (2) the High School and Beyond longitudinal study of 1980 (HSB); and (3) the National Educational Longitudinal Survey 1988 (NELS–88). The grantee will code NELS transcript data to create course-based structural indicators (CBIs) of track location that are comparable to HSB. The analyses of these data involve a variety of statistical techniques, depending on the particular question being addressed.

Educational Significance of the Study: The results of the study will help inform the national debate about the quality of children's family environments, the quality of their schools, and how changes in families and schools may be affecting student achievement by providing information on school-based explanations (principally tracking) for minority and nonminority test score gains over the past 25 years. More specifically, the study will examine the changing relationship between track structure and track effects by studying track structure—a continuing subject of debate in the educational community—at two different points in the cycle of school reform.

Status of Studies and of Products: Much of the work to date has involved careful review of the HSB and NELS transcript data to ensure comparable course-based indicators of tracking in the two data sets. While a complex and time-consuming exercise, these indicators will provide a major advance over previous tracking research, particularly as it relates to minority students. In addition, Rand staff have been working with Don Rock and Judy Pollack of ETS to obtain the Item Response Theory (IRT) test scores they used in their trend reports using NLS–72, HSB, and NELS. Because of advances in methodology since Rock et al.'s work, Rand staff also will estimate their own IRT scores for math and reading in the various databases. This work will be critical for estimating the minority-nonminority test score gap over time because these IRT scores will provide more reliable estimates of achievement gaps when comparing cohorts. Staff also are now developing models that estimate the effects of family characteristics on the test score gap over time.

Three products are due at the end of the second year of funding (September 30, 1998):

- A report on the Course-Based Indicator (CBI) construction for NELS;

- A paper on the effects of changes in individual, family, and school characteristics on minority-nonminority test score differences for 12th-graders in NLS–72, HSB, and NELS (with emphasis on between school analysis); and

- A paper on the changes in the determination of track location, 1972 – 1992.

At the end of year 3 (September 1999), the RAND will submit three reports:

- Public release of the CBIs attached to NELS 1992 data (through ICPSR) with documentation;
- A paper on changes in track structure from 1982 to 1992 based on analysis of the CBIs in HSB and NELS; and
- A RAND report entitled *Explaining Student Achievement Trends, 1972–1992.*

OERI Contact: Judith Anderson, 202–219–2039

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